

**THE EVOLUTION OF FM 100-20, COMMAND AND EMPLOYMENT OF AIR
POWER, (21 JULY 1943): THE FOUNDATION OF MODERN AIRPOWER
DOCTRINE**

**A thesis presented to the Faculty of the U.S. Army
Command and General Staff College in partial
fulfillment of the requirements for the
degree**

MASTER OF MILITARY ART AND SCIENCE

by

**JOHN PATRICK OWENS, MAJ, USAF
B.S., United States Air Force Academy, 1975**

**Fort Leavenworth, Kansas
1989**

Approved for public release; distribution is unlimited.

19981016 034

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.

1. AGENCY USE ONLY (Leave blank)		2. REPORT DATE 2 June 1989	3. REPORT TYPE AND DATES COVERED Master's thesis Aug 88 - Jun 89	
4. TITLE AND SUBTITLE The Evolution of FM 100-20, Command and Employment of Air Power, (21 July 1943): The Foundation of Modern Airpower Doctrine			5. FUNDING NUMBERS	
6. AUTHOR(S) Owens, John Patrick, MAJ, USAF				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) U.S. Army Command and General Staff College ATTN: ATZL-SWD-GD 1 Reynolds Ave., Bldg. 111, Rm. 123 Fort Leavenworth, KS 66027-1352			8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)			10. SPONSORING / MONITORING AGENCY REPORT NUMBER	
11. SUPPLEMENTARY NOTES				
12a. DISTRIBUTION / AVAILABILITY STATEMENT Approved for public release; distribution is unlimited.			12b. DISTRIBUTION CODE A	
13. ABSTRACT (Maximum 200 words) This study examines the evolution of "the Army Air Forces' Declaration of Independence." Released without the concurrence of the Army Ground Forces, FM 100-20 was a distillation of previous doctrine and lessons learned in combat in Northwest Africa during 1942-43. The study demonstrates that all but a few of the essential elements of sound airpower doctrine existed prior to FM 100-20's release. However, certain doctrinal flaws in the earlier manuals coupled with the failure of air and ground commanders to adhere to the most current doctrine available contributed substantially to the initial difficulties experienced in Northwest Africa. Citing contemporary primary source evidence, the study shows that thoughtful combat commanders recognized these failures and moved to correct them prior to the Battle of Kasserine Pass. FM 100-20 was written following the Axis surrender in Northwest Africa and was based on the recommendations of the combat commanders who fought there. The study concludes that it incorporated the valid portions and corrected the flaws of the preceding doctrine and was not merely a subterfuge to further the goal of Air Force "self-determination...under the guise of lessons learned in battle at Kasserine."				
14. SUBJECT TERMS Air Power World War II Close air support			15. NUMBER OF PAGES 125	
			16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT UNCLASSIFIED	18. SECURITY CLASSIFICATION OF THIS PAGE UNCLASSIFIED	19. SECURITY CLASSIFICATION OF ABSTRACT UNCLASSIFIED	20. LIMITATION OF ABSTRACT UL	

**THE EVOLUTION OF FM 100-20, COMMAND AND EMPLOYMENT OF AIR
POWER, (21 JULY 1943): THE FOUNDATION OF MODERN AIRPOWER
DOCTRINE**

**A thesis presented to the Faculty of the U.S. Army
Command and General Staff College in partial
fulfillment of the requirements for the
degree**

MASTER OF MILITARY ART AND SCIENCE

by

**JOHN PATRICK OWENS, MAJ, USAF
B.S., United States Air Force Academy, 1975**

**Fort Leavenworth, Kansas
1989**

Approved for public release; distribution is unlimited.

MASTER OF MILITARY ART AND SCIENCE

THESIS APPROVAL PAGE

Name of candidate: JOHN PATRICK OWENS

Title of thesis: THE EVOLUTION OF FM 100-20, COMMAND AND EMPLOYMENT OF AIR POWER, (21 JULY 1943): THE FOUNDATION OF MODERN AIR POWER DOCTRINE

Approved by:

Robert L. Tipton Thesis Committee Chairman
Lieutenant Colonel Robert L. Tipton, M.S.

John A. Reichley Member, Graduate Faculty
Mr. John A. Reichley, M.B.A., M.S.J.

David C. Skaggs Member, Consulting Faculty
Colonel David C. Skaggs, Ph.D.

Accepted this 2nd day of June 1989 by:

Philip J. Brookes Director, Graduate Degree Programs
Philip J. Brookes, Ph.D.

The opinions and conclusions expressed herein are those of the student author and do not necessarily represent the views of the U.S. Army Command and General Staff College or any other governmental agency. (References to this study should include the foregoing statement.)

ABSTRACT

THE EVOLUTION OF FM 100-20, COMMAND AND EMPLOYMENT OF AIR
POWER (21 JULY 1943): THE FOUNDATION OF MODERN AIR
POWER DOCTRINE, by Major John P. Owens, USAF, 274 pages.

This study examines the evolution of "the Army Air Forces' Declaration of Independence." Released without the concurrence of the Army Ground Forces, FM 100-20 was a distillation of previous doctrine and lessons learned in combat in Northwest Africa during 1942-43. The study demonstrates that all but a few of the essential elements of sound airpower doctrine existed prior to FM 100-20's release. However, certain doctrinal flaws in the earlier manuals coupled with the failure of air and ground commanders to adhere to the most current doctrine available contributed substantially to the initial difficulties experienced in Northwest Africa.

Citing contemporary primary source evidence, the study shows that thoughtful combat commanders recognized these failures and moved to correct them prior to the Battle of Kasserine Pass. FM 100-20 was written following the Axis surrender in Northwest Africa and was based on the recommendations of the combat commanders who fought there. The study concludes that it incorporated the valid portions and corrected the flaws of the preceding doctrine and was not merely a subterfuge to further the goal of Air Force "self-determination...under the guise of lessons learned in battle at Kasserine."

ACKNOWLEDGEMENTS

I gratefully acknowledge the assistance of the staff of the Combined Arms Research Library. Ms. Judy Endicott and Capt. George Cully of the US Air Force Historical Research Center generously rendered invaluable assistance in obtaining documents unavailable through Army channels. Dr. Philip J. Brookes, Director of Graduate Degree Programs, gave encouragement and executive support at crucial points in the birth of this thesis. He has my sincerest apologies for its unusual gestation.

I also owe a profound debt to my darling wife, Rebecca. Without her love, patience, forbearance, moral support, and editorial assistance this thesis could never have come to fruition.

Finally, I dedicate this thesis to my children, Jennifer and David. Hopefully their sacrifice of a Daddy for such a long, long time will have contributed in some measure to an awareness and remembrance of timeless principles paid for in blood by their grandfather's generation. Perhaps in that awareness and remembrance will lie the key, as Santayana suggested, to succeeding generations not having to pay such a terrible price again.

TABLE OF CONTENTS

Abstract	iii
Acknowledgements	iv
Table of Contents	v
List of Maps	vii
List of Figures	viii
Glossary of Abbreviations	ix
Chapters	
1. Introduction	1
Development of the Thesis Question	2
Thesis Question	5
Purpose of the Thesis	5
Limitations	9
Delimitations	10
Background of the Research Problem	12
Notes	19
2. Review of the Literature	23
Primary Sources	25
Secondary Sources	36
Notes	52
3. Methodology	54
Notes	58

4. <u>FM 1-5</u> : Basic Airpower Doctrine	59
Notes	83
5. Wartime Airpower Doctrine: 1940-1943	87
Notes	106
6. <u>FM 100-15</u> : Sound Doctrine for Air-Ground Campaigns	110
Notes	133
7. Northwest Africa, 8 November 1942 - 18 February 1943:	
Sound Doctrine Disregarded	136
Notes	157
8. Northwest Africa, 18 February 1943 - 13 May 1943:	
Reorganization and Victory	161
Notes	179
9. <u>FM 100-20</u> : Airpower Unleashed	184
Notes	201
10. Summary	205
Notes	213
Appendices	214
1. Kuter Letter, 12 May 43	215
2. Kuter Interview, 25 May 43	224
3. Survey of North African Campaign Participants	255
Bibliography	256
Initial Distribution List	271

LIST OF MAPS

7-1. First Actions in Tunisia	
(16-23 November 1942).....	137
7-2. First Allied Drive on Tunis	
(25-30 November 1942).....	138
7-3. Situation in Northern Tunisia	
(16 December 1942).....	139
7-4. Battle for the Eastern Dorsal Passes	
(18-25 January 1943).....	150
7-5. The Dorsal Positions in Central Tunisia	
(13-18 February 1943).....	151
7-6. The Tunisian Battleground	
(Depicting All-Weather Airstrips and	
Fighter Aircraft Radius of Action).....	154

LIST OF FIGURES

8-1. 12th Air Force Organization

(Prior to 18 February 1943) 164

8-2. Allied Air Forces Unified Command Organization, Mediterranean Theater of Operations

(Activated 18 February 1943) 168

GLOSSARY OF ABBREVIATIONS

AAA	Antiaircraft Artillery
AAC	Army Air Corps
AAF	Army Air Forces
AAGS	Army Air Ground System
ACC	Armored Column Cover
ACTS	Air Corps Tactical School
AD	Armored Division
AF	Air Force
AFM	Air Force Manual
AFSC	Air Force Service Command/Armed Forces Staff College (in context)
AGF	Army Ground Forces
AGOS	Air Ground Operations School
AOC	Air Officer Commanding (British Title)
AOC-in-C	Air Officer Commanding-in-Chief (British Title)
APF	Author's Personal Files
AR	Armored Regiment
Armd	Armored
Arty	Artillery
ASC	Air Support Command/Air Support Control (in context)
ASP	Air Support Party
AWC	Army War College
BC	Bomber Command

Bm	Bombardment
Bn	Battalion
Br	British
CADRE	Center for Aerospace Doctrine, Research, and Education
CARL	Combined Arms Research Library
CAS	Close Air Support/(British) Chief of Air Staff (in context)
CAWC	Combined Air Warfare Course
CBO	Combined Bomber Offensive
CCB	Combat Command "B" (or "A", "C", "D")
CG	Commanding General
CGSC	Command and General Staff College
Cmdr	Commander
Cmdt	Commandant
Co	Company
DAF	Desert Air Force
Div	Division
EAC	Eastern Air Command
FAC	Forward Air Controller
FC	Fighter Command
FM	Field Manual
Ftr	Fighter
Fr	French
GAF	German Air Force
GHQ	General Headquarters
Gp	Group

HQ	Headquarters
IAF	Italian Air Force
ID	Infantry Division
KIA	Killed in Action
MAAF	Mediterranean Allied Air Forces
MAC	Mediterranean Air Command (Allied)
MACV	Military Assistance Command Vietnam
MEAF	Middle East Air Forces
MEC	Middle East Command (British)
MMAS	Masters of Military Arts and Science
MTO	Mediterranean Theater of Operations
NAAF	Northwest African Air Forces
NACAF	Northwest African Coastal Air Forces
NASAF	Northwest African Strategic Air Forces
NASC	Northwest African Service Command
NATAF	Northwest African Tactical Air Forces
NATC	Northwest African Training Command
NATCC	Northwest African Troop Carrier Command
OPCON	Operational Control
PME	Professional Military Education
PRW	Photographic Reconnaissance Wing
PSP	Pierced Steel Planking
RAF	Royal Air Force
RAF MAC	Royal Air Force Malta Air Command
RAF ME	Royal Air Force Middle East
RAF MEC	Royal Air Force Middle East Command

RFC	Royal Flying Corps
Rgmt	Regiment
RN	Royal Navy
SAM	Surface to Air Missile
SITREP	Situation Report
SLOC	Sea Lines of Communication
SOR	Specific Operational Requirement
Sq	Squadron
TAC	Tactical Air Command
TACS	Tactical Air Control System
TCW	Troop Carrier Wing
TOT	Time on/over Target
USA	United States Army
USAAC	United States Army Air Corps
USAAF	United States Army Air Forces
USACGSC	United States Army Command and General Staff College
USAF	United States Air Force
USAFHRC	United States Air Force Historical Research Center
USAWC	United States Army War College
USN	United States Navy
USSBS	United States Strategic Bombing Survey
VHF	Very High Frequency (radio)
WDAF	Western Desert Air Force
Wg	Wing

CHAPTER 1

INTRODUCTION

"LAND POWER AND AIR POWER ARE CO-EQUAL AND INTERDEPENDENT FORCES; NEITHER IS AN AUXILIARY OF THE OTHER....THE COMMAND OF AIR AND GROUND FORCES IN A THEATER OF OPERATIONS WILL BE VESTED IN THE SUPERIOR COMMANDER CHARGED WITH THE ACTUAL CONDUCT OF OPERATIONS IN THE THEATER, WHO WILL EXERCISE COMMAND OF AIR FORCES THROUGH THE AIR FORCE COMMANDER AND COMMAND OF GROUND FORCES THROUGH THE GROUND FORCE COMMANDER." <1>

These words appeared in upper case bold print in the opening paragraphs of War Department Field Manual, FM 100-20, Command and Employment of Air Power. This manual, written in June 1943 in the aftermath of the Northwest African Campaign of World War II, was published under the signature of Army Chief of Staff Gen. George C. Marshall, without the concurrence of the Commanding General, Army Ground Forces (AGF), Lt. Gen. Lesley J. McNair. FM 100-20, in its original, unchanged form was to guide the US Army's use of its air forces for the remainder of the war. Its guiding principles are still recognized in US Air Force basic doctrine today. <2>

The fundamental issues arising out of FM 100-20 remain at the heart of a basic controversy which preceded its publication and, in fact, still exists between the exponents of land and airpower at the tactical level. That controversy centers around the command and control of airpower in support of the land battle. The US Air Force's fundamental beliefs about warfighting are expressed in Air Force Manual (AFM) 1-1, Basic Aerospace Doctrine. <3> The

US Army's basic combat doctrine is currently called AirLand Battle and is set forth in its "Keystone warfighting manual", FM 100-5, Operations. <4>

DEVELOPMENT OF THE THESIS QUESTION

AirLand Battle doctrine places particular emphasis on the importance of command and control because of the speed, scope, and intensity of modern warfare. These factors create a potential for chaos on a far greater scale than ever before possible. The dynamics of combat and the fluidity of the modern battlefield, with its simultaneous close, deep, and rear operations can only exacerbate the fog and friction of war. In order for command and control elements to function effectively, they must be flexible and responsive. Commanders must delegate the authority, grant the tactical and operational latitude, and allocate the resources necessary for subordinates to accomplish the mission and comply with the commander's intent. Given its potential to dramatically influence surface operations, tactical airpower is preeminent among these resources. <5>

In light of this reasoning, which FM 100-5 so eloquently expresses, some Army officers see a growing incompatibility between the Army's basic doctrine and that of the Air Force. <6> The controversy over Air Force doctrine revolves around the Air Force's views on the primacy of the counter air mission, the indivisibility of airpower, and the need for centralized control of airpower by technical and tactical experts in order to ensure that the first two of these are adhered to. <7>

This controversy has raged in one form or another, now hotter, now colder (varying in almost direct proportion to the Air Force's budgetary constraints), since World War I. <8> With the advent of AirLand Battle doctrine and ever

tightening fiscal constraints, many Army officers recognize that their own success on the modern battlefield depends to a significant degree on Air Force support. <9>

Many view this dependence with alarm. There are basically three reasons for this. First, because of the Air Force's continued insistence that:

The first consideration in employing aerospace forces is gaining and maintaining the freedom of action to conduct operations against the enemy. An air commander usually gains this freedom by taking the necessary steps to control the aerospace environment. Control of the aerospace environment gives commanders the freedom to conduct successful attacks which can neutralize or destroy an enemy's warfighting potential. <10>

This sounds suspiciously like dogfighting and strategic bombing. The United States has not fought a war since World War II in which prohibitive interference by a hostile air force has been a major concern for surface forces. Because this is so, many feel this "gaining and maintaining the freedom of action to conduct operations against the enemy" may be a faulty assessment of priorities stemming more from a sentimental attachment to a bygone romantic era than any realistic appraisal of potential threats or requirements. Given the recognized need for direct tactical air support in the land battle against overwhelmingly superior forces, the potential for disaster there runs high should the Air Force be off somewhere fighting an "air war" and neglecting its responsibility to provide that direct support. <11>

The second reason many Army officers view Air Force doctrine with a measure of jaundice is the Air Force's insistence on the "indivisibility of airpower." The thrust of this concept is that an air commander's "guiding

principle is to employ aerospace power as an indivisible entity based on objectives, threats, and opportunities." <12> Since the Air Force is so enthralled with air superiority and multi-role aircraft, which can perform both the direct support role and also the counter air role, "indivisibility" might really be some sort of Air Force code word for the Clausewitzian principle of mass, or the focusing of the majority of one's forces on one objective (i.e.: the enemy air force). <13>

While there is much to be said for the wisdom of observing the principle of mass, it is also true that its direct corollary is economy of force. <14> Given the clearly enunciated priority the Air Force assigns to the counter air role, its preference for multi-role tactical aircraft, and this insistence that the air arm be wielded as an "indivisible entity," it takes little imagination to determine where on the AirLand Battlefield that economy of (air) force is likely to occur. <15>

The tenet of Air Force doctrine, however, which most sticks in the average Army officer's craw, is the idea of centralized control over airpower. As AFM 1-1 states, "Centralized control allows an air commander to focus an air effort on those priorities which will lead to victory." <16> The operative phrase here is "Centralized control allows an air commander...." With his doctrinal focus on gaining and maintaining air superiority, a genuine danger lies in reposing this centralized control in the hands of an air commander who may have little or no appreciation for local ground combat situations. <17>

In view of the Army's significant dependence on tactical air support, it is not surprising that many Army commanders at subordinate levels should question the validity of the centralized control of airmen over tactical

airpower. <18> Does history offer any lessons on waging joint warfare with limited air assets? If so, do the partners in the air-ground coordination process have selective memories when they interpret the events which yielded those lessons? <19> Was the doctrine set forth in FM 100-20 appropriately derived from, and validated by, combat experience in the North African campaign of World War II as the Air Force claims? Or, did US Army Air Forces (USAAF) leaders adopt the principles enumerated in FM 100-20 merely to further their "desire for self-determination...under the guise of lessons learned in battle at Kasserine" as postulated by some present-day Army thinkers? <20>

THESIS QUESTION

Was the adoption of FM 100-20 the result of dissatisfaction with previously existing doctrine found to be faulty in combat?

PURPOSE OF THE THESIS

The purpose of this thesis is to determine why the US Army adopted FM 100-20, and in so doing, perhaps shed some light on why the US Air Force has ever since continued to perpetuate the fundamental principles that manual contained. Joint cooperation can be enhanced by studying, understanding, and appreciating the various services' doctrines. This can best be accomplished by a careful analysis of historical reasons for the development of doctrine. <21>

The Air Force maintains that FM 100-20 was adopted immediately following the North African campaigns of World War II and was the codification of the lessons learned there in combat. <22> At least one

senior Air Force leader, retired Lt. Gen. Elwood R. Quesada, who was present at the time, claims this to have been the case. Gen. Quesada, revered by the Army for his role in providing tactical air support to Gen. George S. Patton's Third Army later on during the war, further maintains that from its very beginning as a separate service, the Air Force's most powerful and influential leaders felt a profound moral obligation to recall those lessons in order to continue being able to provide effective and significant tactical air support for the Army. <23>

The Air Force has tended to be somewhat lax overall in the scholarship and research supporting its claims. In some cases, the necessary documentation which might permit independent verification is completely absent. <24> This may have been done purposefully in some cases because of the forum in which they appeared or perhaps even in an effort to protect the reputations and sensibilities of those who made the mistakes which led to the lessons being learned. In other cases, however, most notably formal lectures and presentations made in professional military education (PME) courses, enough of the verifiable facts are so skewed as to cast doubt on the lecturer's credibility altogether. <25>

By the same token, the Air Force has tended to disregard or gloss over the fact that the Army has had some legitimate complaints with the air support afforded it by the largely autonomous AAF and later by the independent USAF both during and after World War II. Particularly in the beginning stages of that war, and again in Korea, responses to calls for air support were often not timely. Requests for aircraft to be made available for training purposes were often grudgingly, inadequately, or simply not met. Despite genuinely compelling reasons for these circumstances, the Air

Force apparently has been indifferent as to whether the Army accepted or even understood those reasons. <26>

During the immediate post-war years, the emphasis throughout the defense establishment shifted to nuclear weapons and the drastic demobilization and ruthless budget cutting which prevailed virtually emasculated tactical airpower. The perceived neglect of this class of aviation brought bitter recriminations during the early phases of the Korean War. <27> However, these are points that the Air Force, perhaps not being particularly proud of, rarely, if ever, mentions. Regardless of its motivation, the impact of this lax scholarship has been to perpetuate the belief that these "lessons learned" are merely part of some sort of Air Force party line. <28>

On the other hand, a number of US Army officers and historians claim that these "lessons learned" were merely a subterfuge used by ambitious Air Corps leaders to further the parochial aim of achieving an independent Air Force. <29> Several Army officers and historians have written studies which further suggest that Air Force adherence to the doctrines of centralized control by airmen and the primacy of the counter air campaign indicates how little the Air Force has cared, both historically and even still, about fulfilling its obligation to provide support for the Army. <30>

Worthy of note, however, is the manner in which a number of these studies consistently overlook facts which might weaken their cases. For example, Lt. Col. Kenneth Steadman of the US Army Command and General Staff College's Combat Studies Institute attributed poor air-ground cooperation in the latter stages of the Tunisian campaign, and later on in Sicily, to the system of centralized control. Claiming airmen felt

centralized control relieved them of the need to answer to anyone for their actions, Steadman maintains the air forces then abdicated their responsibility to even talk or plan with the ground forces. According to Steadman, "The participating air forces refused to coordinate their plans [for Operation HUSKY, the seizure of Sicily,] with the other services..."

<31>

This statement is not only inflammatory, it is demonstrably false. While it is true the air plan was not integrated in detail with the ground and naval plans, this was not due to some sort of churlish refusal to work with the other services. What Steadman and some other historians who have written about this emotionally charged and highly controversial subject consistently fail to mention is that while the Axis surrender in Tunisia had left Allied ground forces with little else but planning to occupy them, the Allied air forces were still, in fact very, very busy. Although they did send officers to participate in the joint planning conferences, the Northwest African Air Forces (NAAF) were already (and had been for some time) planning, directing, and conducting intensive, sustained, offensive combat operations against the Axis on Pantelleria, Sicily, Corsica, Sardinia, and Southern Italy. Had they not been, it is quite probable the Allied landings on Sicily would have had a radically different outcome. <32>

In the same vein, ground officers were far from blameless themselves when it came to working together. In a 1974 interview Gen. Laurence S. Kuter, Deputy Commander of the Northwest African Tactical Air Forces (NATAF) during the Tunisian Campaign and the planning for HUSKY, recalled that he had had difficulty getting senior American ground officers to even come see NATAF HQ. In fact, Gen. Kuter maintained that Gen. Mark Clark, at

that time designated to command the Sicily Invasion, never did visit NATAF HQ. It is significant to note that it was co-located with the 18th (Allied) Army Group HQ. 18th Army Gp HQ was the senior land component headquarters in the Northwest African theater. <33>

LIMITATIONS

This study is not a detailed statistical analysis of missions flown by the AAF in the Northwest African Campaign. A preliminary review of the mission summaries that were examined tended to support the claims of AAF leaders as to the types and effectiveness of missions flown before and after the reorganization of Allied Air Forces. However, because of insufficient data, no statistically significant conclusions can be drawn in this regard.

Also, except in terms of the raw numbers of planes, equipment, supplies, vehicles, guns, and tanks actually destroyed, and personnel actually killed or wounded, the effectiveness of air missions and the short, medium, and long term impact of air superiority, or indeed any form of military effectiveness, defies quantification. One need only look for illustration of this to the "McNamara-fication" of the Vietnam War. <34>

Is it possible to measure the psychological degradation of combat effectiveness suffered by troops exposed to air attack for the first time? How does one quantify the deterioration in combat efficiency of large units which lack the freedom to maneuver or mass for a concentrated attack because of their own vulnerability to air attack? How indeed can one quantify the lack of progress made by ground forces because of support not delivered by air forces? If lack of progress on the ground can be

attributable to lack of air support, how does one explain the successes or failures of armies before the advent of airplanes?

By the same token, how does one determine the numbers of air support sorties not flown by air forces because of a lack of forward located, all-weather airfields and logistic support? These were factors over which the ground forces had far more control than the air forces. Is it not similarly difficult to measure the degradation of combat effectiveness of aircrew exposed to anti-aircraft fire and fighter opposition for the first time while flying missions? These were factors which certainly had an impact whether those crews were flying missions in direct support of ground troops or performing so-called "independent" missions.

Because of the imponderable nature of these questions, this study makes no attempt at quantification. The variables are too many and too slippery. Any results obtained would be far too inconclusive to justify the attempt. The study is therefore limited to an analysis of the evolution of air doctrine which references actual historical events and/or the circumstances which influenced those events.

DELIMITATIONS

This study examines the evolution of published US Army airpower doctrine from the release of FM 1-5, Employment of Aviation of the Army, on 15 April 1940, up through, and including, the publication of FM 100-20, Command and Employment of Air Power, on 21 July 1943. Since both the Army and Air Force maintain that air superiority is a prerequisite for sustained operations <35>, this study seeks to illuminate the doctrine contained in these old manuals, highlighting those portions dealing with air

superiority. Specifically, the study examines what those manuals had to say regarding the counter air force operations necessary to gain and maintain air superiority, and also the command and control of the air forces which were to conduct those operations. Where necessary to illustrate a point, compare, contrast, or explain various airpower theories and concepts, references to historical events or circumstances have been made. This was necessary in a number of cases to disabuse a variety of popular misconceptions about airpower which have either arisen in the postwar era or, in some cases, been perpetuated from the prewar era.

This study is not about close air support (CAS). It does not seek to debate the merits of CAS, its place in the hierarchy of Air Force roles and missions, its necessity for success in the combined arms arena, the type, or types, of aircraft which should be used to perform the mission, or even which of the services should perform CAS. This study assumes that CAS, and indeed all air support, direct and indirect, regardless of who performs it, is essential to the combined arms combat power of the United States. However, having delimited the study thusly, it must also be recognized that it would be virtually impossible to discuss airpower doctrine, particularly tactical air doctrine, without examining, at least obliquely, the direct support of surface forces and the place in the hierarchy of Air Force roles and missions it held during the period under consideration.

At the same time, this study is also not about strategic bombardment, its wisdom, effectiveness, or human and economic costs. The historical record of World War II speaks far more eloquently to those issues than this study could even presume to speak. Yet, it would do a great injustice to any study of the evolution of airpower doctrine, particularly in the period under

consideration, to attempt not to address this subject as well. The result of such an attempt would be so far removed from the realities of its historical context as to render it rather irrelevant and inconsequential. <36>

Similarly, discussion of air superiority is also unavoidable. In fact, because Air Force and Army doctrine, both today's and even that preceding FM 100-20's 1943 release, concede that air superiority is essential for the success of any sustained operations against an enemy, the discussion of air superiority, how, and by whom it is to be achieved and maintained, must be the central theme of any consideration of air doctrine. <37>

BACKGROUND OF THE RESEARCH PROBLEM

Among the lore commonly accepted by modern Air Force officers, the history of the evolution of airpower doctrine, particularly tactical airpower doctrine, assumes the proportions of legend. As the legend goes, air support in the initial stages of the Northwest African Campaign of World War II was largely ineffective. This was due to the dissipation of AAF assets into many small "penny packets" which were placed at the disposal of ground commanders to use, or not use, as they saw fit. <38> This had been done to satisfy the ground commanders' desire that their commands have a slice of the available airpower pie. In so doing, ground commanders forfeited airpower's fundamental advantages: speed, range, and flexibility. According to the Air Force view, these advantages could have enabled Allied forces, under a system of centralized control, to mass their air assets at key times and places of their own (rather than the enemy's) choosing to achieve decisive results. <42>

As it was, the legend continues, the ground commanders piddled their air support assets away to such an extent that when they really needed massed airpower to stop the German onslaught at Kasserine Pass, it was sadly lacking. The accepted belief among Air Force officers is that the extensive reorganization of the Allied Air Forces in Northwest Africa which came out of the Casablanca Conference was a direct result of the defeat at Kasserine. Once the Air Force wrested control of its own destiny from the ground force commanders, all the major problems were immediately solved and, with minor tweaking of tactics, techniques, and procedures, everything worked just fine from then on. <43> In fact, this version of the events in Northwest Africa is what is taught as the first step in the evolution of the Tactical Air Control System both at the USAF Air Ground Operations School at Hurlburt Field, FL and the Combined Air Warfare Course at Maxwell AFB, AL. <44>

Even the most cursory research, however, reveals that a number of these "truths" which are held to be self-evident, in fact are not. To begin with, the reorganization of the Allied air forces into one centrally controlled entity was not the main theme of the Casablanca Conference, nor was it even a particularly controversial issue at the time among the senior Allied leadership. In fact, as early as 19 November 1942, less than two weeks after the initial TORCH landings, it became apparent that the existing organization of the Allied air forces was not flexible enough to deal with the rapidly changing ground situation in Northwest Africa. On that date the Combined Chiefs of Staff, on the recommendation of the British Chiefs, had solicited the views of the interested parties on a unified air command for the entire Mediterranean area. <45>

As for the contention that it was the "defeat" at Kasserine which prompted the reorganization, the truth is that the weather, not jealous ground commanders, kept the majority of Allied planes grounded for most of that battle. As far as the reorganization is concerned, Gen. Dwight D. Eisenhower, theater commander, had activated the Allied Air Force on 5 January 1943. This was almost six weeks before the Battle of Kasserine Pass and was, in fact, the first step in the process which was completed by the activation of NATAF on 18 February 1943, during the height of the battle. <46>

For Air Force officers this revelation may shake the foundations of the "Faith" a bit. It also poses a sticky question: How far afield has the rest of the legend wandered over the years?

Historians generally concede that prior to America's entry to the war, then Maj. Gen. Henry H. "Hap" Arnold, Commanding General of the AAF, and other influential air officers, consciously decided to let the autonomy issue lay dormant for the duration. In fact, in February 1942, shortly after America's entry into the war, Arnold appointed a bright young air staff favorite of Gen. Marshall's, Brig. Gen. Laurence S. Kuter, to work on a task force whose sole purpose was, "once and for all,...to stifle the separate air force gang, and last out the war." <47>

Gen. Kuter's key role in that project is significant because it establishes his position on the separate air force question, at least for the duration. Following this air staff assignment, Kuter went overseas where he served as commander of a Heavy Bombardment Air Division in England prior to reporting to Algeria. In Northwest Africa he soon became Deputy Commander, and hence the senior American officer, of the newly created

NATAF. <48> Kuter's presence in Northwest Africa as a combat leader therefore casts a shadow of doubt over the thesis that there was some sort of autonomy plot at work behind the "lessons learned" in Northwest Africa.

Kuter was the officer who wrote the report to Gen. Arnold and subsequently briefed Gen. Marshall on the air lessons learned in Northwest Africa. <49> This decision, and the acquiescence of the separatist factions both within and outside the Air Corps were the result of patriotism and allegiance to a higher cause. <50>

Kuter, Arnold, and many others still believed that an independent, separately funded Air Force, free of the petty bickering and pervasive branch rivalries of the Army was in the best interests of the unshackled development of airpower, and therefore, ultimately in the best interest of the nation as well. However, in the short term, continuing the autonomy struggle in the face of bitter resistance from the War Department General Staff, not to mention the Air Corps' own lack of staff personnel and experience, could only have diverted effort and resources from the absolutely vital tasks at hand. Those tasks were the undeniable need to expand the meager prewar Air Corps, prepare for, fight, and win the approaching war with all possible speed. <51>

If neither the advancement of the cause of an independent Air Force nor a parochial lack of concern for the "big picture" were the primary motivators behind the new doctrine, what was? Since both Air Force and Army historians view the publication and release of FM 100-20 in July 1943 as the watershed event, there must be at least some basis in fact to the legend. <52> The logical place for an answer to this question then must lay

somewhere in the doctrine, organization, and employment of airpower in North Africa.

To properly analyze the doctrine governing the command and employment of American airpower, it is necessary to establish when and where the watershed event occurred which gave rise to the change in thinking represented by FM 100-20. That can be accomplished by reference to several sources. One of these is Dr. Kent R. Greenfield's Army Ground Forces and the Air-Ground Battle Team. In Chapter Five of the study, "REVISION OF AAF DOCTRINE AND ORGANIZATION, 1943", Dr. Greenfield briefly listed the basic provisions of FM 100-20 and the impact AGF officers perceived that manual to have on air-ground cooperation. In explaining its emergence he claimed Gen. Bernard L. Montgomery's "Notes on High Command in War" was the motivating force behind FM 100-20's forceful and unequivocal restatement of American airpower doctrine. <53>

Dr. Greenfield maintained that although FM 100-20 "faithfully mirrored General Montgomery's statement of principles" it "...did not...faithfully reflect the application of those principles...." He went on to declare, "A different and stricter application of the doctrines stated in FM 100-20 was embodied in the tactical air organization on the northern front in Tunisia, which produced results disappointing to American ground commanders." In a footnote to that statement he wrote, "This organization was the model regarding which Brig Gen Laurence S. Kuter, Deputy Comdr of the Northwest Africa [sic] Tactical Air Force, made a glowing report to AAF and AGF officers at the Pentagon on 25 May 43." <54>

That report was based on a letter Gen. Kuter had earlier sent to Gen. Arnold. Dated 12 May 1943, the subject of that letter was "Organization of

American Air Forces." In it, Kuter described the employment philosophy and the command and control structure of airpower in Northwest Africa both prior to and after the 18 February 1943 reorganization of Allied forces. The post reorganization employment philosophy and the command and control structures emplaced were the ones he praised both in this letter and the transcript of a later oral report. They were, in fact, the models upon which FM 100-20 and the resultant restructuring of the AAF's combat forces were based. This reorganization which took place in Northwest Africa in February 1943 was clearly the watershed event. <55>

Further confirmation of this as the watershed event can be obtained from several other sources, most notably the US Army's official history of the campaign, Northwest Africa: Seizing the Initiative in the West. The author of that volume, Dr. George F. Howe, took a somewhat broader and more generous view of the reorganization than had Dr. Greenfield. Dr. Howe at least acknowledged that air superiority was also a necessary form of air support to ground forces.

To summarize, the reorganization of 19-20 February 1943 was destined, through use of the ground-air doctrines tested in Libya, to promote by painful but inexorable steps the achievement of Allied air supremacy in Tunisia. <56>

The Air Force, perhaps even more than any other service because of the medium in which it fights, is action-oriented. Unfortunately, coexistent with this love of action and the making of history, there is a commensurate disdain for non-active pursuits such as writing, or even reading, history. In this, the Air Force may be its own worst enemy when it comes to documenting and/or reaping the benefits of the experience upon which its

own particular brand of "Truth" -- doctrine -- is based. The largely preventable, and therefore profoundly tragic corollary to this trait is that a lot of time, resources, and lives are wasted needlessly in "reinventing the wheel" with each new war. <57> This thesis then is a reexamination of the original blueprint of the wheel. It is undertaken in the hope of discovering why the original designers chose to make it round.

CHAPTER 1 NOTES

<1> US Army, FM 100-20, War Department Field Manual -- Command and Employment of Air Power (1943): 1-2.

<2> Kent R. Greenfield, Army Ground Forces and the Air-Ground Battle Team, Including Organic Light Aviation, Army Ground Forces Study No. 35 (1948): 47; US Air Force, AFM 1-1, Basic Aerospace Doctrine of the United States Air Force (1984): A2-A3.

<3> AFM 1-1 (1984): v-vi.

<4> US Army, FM 100-1, The Army (1986): i, iii; US Army, FM 100-5, Operations (1986): i.

<5> FM 100-5 (1986): 1, 3-4, 9, 19-22, 47-50.

<6> Alan M. Russo, "Kasserine: The Myth and Its Warning for AirLand Battle Operations," (Air War College Research Report #AU-AWC-85-183, Air University, 1985): 1-3.

<7> AFM 1-1 (1984): 2-10 - 2-13, 2-20 - 2-21.

<8> Russo: 14; Thomas H. Greer, The Development of Air Doctrine in the Army Air Arm, 1917-1941, USAF Historical Study No. 89 (1955): 14; James W. Canan, "Sorting Out the AirLand Partnership", Air Force Magazine 71 (April 1988): 102-107; Mark W. Clark, "What Kind of Air Support Does the Army Want?", Air Force Magazine 33 (December 1950): 24-25, 52; William A. Gorton, "Of Mudfighters and Elephants", Air Force Magazine 71 (October 1988): 102-107.

<9> FM 100-5 (1986): 4, 12-13, 25, 47-50; Edgar Ulsamer, "Winds of Change in Tactical Warfare", Air Force Magazine 71 (April 1988): 45-49; John T. Correll, "An Air Force for the Lean Years", Air Force Magazine 71 (June 1988): 56-64.

<10> AFM 1-1 (1984): 2-11.

<11> Gorton: 102-107.

<12> AFM 1-1 (1984): 2-10 - 2-11.

<13> Canan: 102-107.

<14> Carl von Clausewitz, "Principles of War" in Roots of Strategy, Book 2 (1987): 319-320, 325-326.

<15> E.M. Lynch, "Close Air Support: Its Failed Form and Its Failing Function", Armed Forces Journal International 124 (August 1986): 72-78; C.E. Myers, "Air Support for Army Maneuver Forces", Armed Forces Journal International 124 (March 1987): 46-47; Gorton: 102-107.

<16> AFM 1-1 (1984): 2-20.

<17> Lynch: 72-78; Myers: 46-47; Gorton: 102-107.

<18> Russo: 36.

<19> Greenfield: 2-5; Russo: 20-22; US Army CAS Requirements Board, History of Close Air Support (unpublished annex to the Board's Final Report) (1963): 16, 23. (Cited hereafter as History of CAS.); Kenneth A. Steadman, A Comparative Look at Air-Ground Support Doctrine and Practice in World War II, Combat Studies Institute Report No. 2 (1982): 8-9; AFM 1-1 (1984): A2-A3; "History of the Tactical Air Control System", Lecture Delivered at the Joint Firepower Control Course (JFCC), US Air Force Air Ground Operations School (AGOS), 3 January 1989, Hurlburt Field, FL. (Cited hereafter as JFCC/AGOS.); "USAF Basic Doctrine", Lecture Delivered at the Combined Air Warfare Course (CAWC), 24 January 1989, Center for Aerospace Doctrine, Research, and Education (CADRE), Maxwell AFB, AL. (Cited hereafter as CAWC/CADRE.)

<20> Russo: 2-3.

<21> Armed Forces Staff College, AFSC Pub 1, The Joint Staff Officer's Guide (1986): 1-3.

<22> AFM 1-1 (1984): A-1 - A-3; JFCC/AGOS; CAWC/CADRE; Robert F. Futrell, "Airpower Lessons of World War II", Air Force and Space Digest 48 (September, 1965): 42-50, 53.

<23> Richard H. Kohn and Joseph P. Harahan, eds., Air Superiority in World War II and Korea (1983): 65.

<24> Futrell, "Airpower Lessons": 42-50, 53; Martin Blumenson, Kasserine Pass (1983): 59.

<25> JFCC/AGOS; CAWC/CADRE; Jon F. Johnsen and John P. Owens, "US Air Force Close Air Support", Student Presentation Delivered at USACGSC, 10 July 1987, Ft. Leavenworth, KS.

<26> Greenfield: 16, 19-20, 35-36, 49-50, 74; Clark: 24-25, 52; Edward M. Almond, "Mistakes in Air-Support Methods in Korea", US News & World Report 34 (March 6, 1953): 58-61.

<27> Clark: 24-25, 52; Almond: 58-61.

<28> Russo: iii.

- <29> Russo: 1; Greenfield: 48-49; Steadman: 8-9; History of CAS: 24.
- <30> Russo: iii; Christopher R. Gabel, "The US Army GHQ Maneuvers of 1941" (Ph.D. Dissertation, Ohio State University, 1981): 57, 71, 97-99, 310, 313, 327.
- <31> Steadman: 9.
- <32> Wesley F. Craven and James L. Cate, eds., Europe: TORCH to POINTBLANK, August 1942 to December 1943 (The Army Air Forces in World War II) (7 vols., 1948-1958) 2: 415-487.
- <33> Interview K239.0512-810, Gen. Laurence S. Kuter, 7-10 October 1974, US Air Force Historical Research Center, Maxwell AFB, AL: 313-314.
- <34> Harry G. Summers, On Strategy (1982): 1-2; Stanley Karnow, Vietnam: A History (1983): 254.
- <35> AFM 1-1 (1984): 2-12; FM 100-5 (1986): 47-48.
- <36> Richard J. Overy, The Air War, 1939-1945 (1981): 1.
- <37> AFM 1-1 (1984): 2-11 - 2-13; FM 100-5 (1986): 47-48; US Army, FM 100-15, Field Service Regulations -- Larger Units (1942): 12.
- <38> Robert F. Futrell, Ideas, Concepts, Doctrine: A History of Basic Thinking in the United States Air Force, 1907-1964 (1974): 56.
- <39> Futrell, Ideas: 56-57; Forrest C. Pogue, Ordeal and Hope, 1939-1942, (George C. Marshall) (4 vols., 1963-1987) 2: 290-296.
- <40> Futrell, Ideas: 56-57; Pogue 2: 290-296.
- <41> AFM 1-1 (1984): A-1 - A-3.
- <42> Charles L. Donnelly, Jr., "A Theater Level View of Air Power," Air Power Journal 1 (Summer 1987): 3-8.
- <43> Johnsen and Owens.
- <44> JFCC/AGOS; CAWC/CADRE.
- <45> Craven and Cate 2: 106.
- <46> George F. Howe, Northwest Africa: Seizing the Initiative in the West (The US Army in World War II: Mediterranean Theater of Operations) (1957): 353; Craven and Cate 2: 113, 140, 157. It is worthy of note, however, and not entirely coincidental, that the advent of suitable flying weather a few days after NATAF's activation marked the beginning of the Axis' punishing retreat from Kasserine. See Craven and Cate 2: 157-160.

<47> Mark S. Watson, Chief of Staff: Prewar Plans and Preparations (The US Army in World War II: The War Department) (1950): 286; John L. Frisbee, ed., Makers of the United States Air Force (1987): 116-117.

<48> Dewitt S. Copp, Forged in Fire (1982): 315-316, 324, 331.

<49> Letter, Kuter to Commanding General US Army Air Forces, 12 May 1943, S-2704, Combined Arms Research Library, Ft Leavenworth, KS: II.3-III.2; Greenfield: 48; Kohn: 36.

<50> Watson: 286; Futrell Ideas: 98.

<51> Watson: 286; Futrell Ideas: 98.

<52> Greenfield: 48; Craven and Cate 2: 205-206.

<53> Greenfield: 47.

<54> Greenfield: 48.

<55> Forrest Davis, "How to Conquer the Continent, (Part 1)" Saturday Evening Post 216 (July 24, 1943): 20-21, 93-94; Davis, "How to Conquer the Continent, (Part 2)" Saturday Evening Post 216 (July 31, 1943): 20-21, 93-94; Kuter, "Air-Ground Cooperation in North Africa," Air Force Magazine 26 (July 1943): 4-6, 33.

<56> Howe: 493.

<57> William Emerson, "Doctrine and Dogma," Army Magazine 13 (June 1963): 50-62; Kuter, "Goddammit, Georgie!" Air Force Magazine 56 (February 1973): 51-56; William S. Lind, "Reading, Writing, and Policy Review," Air University Review 36 (November-December 1984): 66-70; William W. Momyer, Air Power in Three Wars (1978): v.

CHAPTER 2

REVIEW OF THE LITERATURE

This review of literature is undertaken to accomplish two purposes. The first is to acquaint the reader with the sheer volume of material available on the air war in North Africa and the controversy over the control of airpower. The second is to provide succeeding researchers with synopses and analyses of the more important and relevant sources used in the preparation of this thesis.

The literature surveyed in the research for this thesis consisted of books, government documents (both published and unpublished), articles from periodicals, interviews, and correspondence. These various sources were used to gain an appreciation for the chronology and importance of events and doctrinal development.

A great many of the materials used were primary source, with a heavy reliance on secondary sources to help ferret out the right primary sources. The primary source materials ran the gamut from the personal papers of historical figures and original documents contained in Army and Air Force archives to the memoirs of, and interviews with, actual participants in the Northwest African Campaign. The secondary sources included historical studies, biographies, articles from professional and historical journals, unofficial histories, and official histories published by the various armed forces of the participating nations.

The majority of primary source doctrinal materials were found in the Combined Arms Research Library (CARL) at the United States Army Command and General Staff College (USACGSC), Fort Leavenworth, Kansas and the US Army War College (USAWC) Archives at Carlisle Barracks, PA. CARL also provided numerous original documents relating to ground forces operations, a few copies of original AAF and RAF documents dealing with organization and lessons learned, and several original documents containing overall perspectives of the campaign. The US Air Force Historical Research Center (USAFHRC) at Maxwell AFB, AL provided several microfilm reels full of original documents as well as access to some of the personal papers of AAF luminaries and transcripts of oral history interviews.

This review of literature is divided into two parts. Only the most important of the literally hundreds of sources used are herein reviewed. The first part summarizes and analyzes the primary sources. These were of the following categories: field manuals (FMs); reports; personal papers; memoirs; oral history program interviews; and the author's interviews and correspondence with actual participants in the campaign.

The second part describes and evaluates the secondary sources used. Here again, because of the sheer volume of material surveyed and reviewed, only the most significant are specifically addressed in this review. The subcategories of secondary sources reviewed include: official histories; books; historical studies; theses; and research papers.

PRIMARY SOURCES

FIELD MANUALS

These were valuable for determining firsthand the state of tactical air doctrine both going into and coming out of the North African Campaign. All available FMs pertaining to the command, control, and employment of immediate prewar, World War II, and immediate postwar Army aviation were examined.

Prewar Doctrine: FM 1-5, Employment of Aviation of the Army, and FM 1-10, Tactics and Technique of Air Attack, both published in 1940, and a 1941 version of FM 100-5, Operations, were all written prior to America's entry into the war. They provide a good snapshot of airpower doctrine and the Army's view of the role of airpower in war as officially sanctioned by the War Department going into World War II.

Pre-Northwest Africa Wartime Doctrine: FM 1-15, Tactics and Technique of Air Fighting, FM 1-20, Tactics and Technique of Air Reconnaissance and Observation, FM 1-75, Army Air Forces Combat Orders, FM 31-35, Aviation in Support of Ground Forces, and FM 100-15, Larger Units, were all published in 1942. This was subsequent to America's entry into the war, yet prior to any large scale air operations in support of a land campaign by the US Army. These manuals, in conjunction with those listed previously, constituted the AAF tactical and organizational doctrine at the start of and during much of the Northwest African Campaign.

Post-Northwest Africa Wartime Doctrine: FM 1-25, Air Defense, FM 1-46, Fighter Radiotelephone Procedures and Code, and FM 100-20, Command and Employment of Air Power were all written immediately

following the Northwest African Campaign. Many of the concepts, much of the operational experience and expertise gained, and most of the lessons learned there are directly reflected in these manuals.

REPORTS

A number of these were quite valuable, particularly the after-action reports written by senior commanders. In reading these reports, it rapidly becomes apparent that only the most senior of these had much, if any, appreciation for events in a theater-wide perspective. Even the focus of such senior officers as corps commanders tended to be extremely narrow.

Eisenhower Report: One of the most important and interesting reports is Gen. Dwight D. Eisenhower's untitled report on Operation Torch and the subsequent Tunisian campaign. Originally written as an operational summary for the Combined Chiefs of Staff, it was later included in the basic reading for members of the Joint Operations Review Board of the Army and Navy Staff College. The report is extremely candid and offers a well written, succinct, and analytical account of all aspects of the campaign from the planning phase through its implications for the coming Italian campaign. This report offers a broad view of the campaign from the perspective of the man who was in the best position to see and appreciate the significance and interdependence of its land, sea, and air phases.

Leigh-Mallory Report: Air Marshal Sir Trafford Leigh-Mallory submitted a report to the British Air Staff titled "Air Lessons Learned in N.W. Africa" following a visit there in April 1943. Leigh-Mallory was one of the RAF's Fighter Command leaders during the Battle of Britain. His background, tactical expertise, and experience were exclusively along the

lines of short range ground support and air defense fighters. His editorial remarks in this report on the Allies unified air organization in the Mediterranean reflect this. This report, his earlier performance as No. 12 Group Air Officer Commanding (AOC) during the Battle of Britain, and his later performance as commander of the Allied Expeditionary Air Force in Normandy show clearly that Leigh-Mallory had a great deal of difficulty grasping the flexibility of airpower or comprehending the value of unified command over it. <1> Nevertheless, this report was a valuable source for determining the size, shape, and nature of the eventual organization of Allied air forces in North Africa.

Kuter Report: Of enormous value and significance is the letter, with annexes, NATAF deputy commander Brig. Gen. Laurence S. Kuter sent to AAF Chief Gen. Henry H. Arnold. This report concerned the initial organization and subsequent reorganization of American air forces. In it, he gives specific examples of the misuse of air assets. The most interesting aspect of this report is its logical and practical argument against an organizational concept which, although it guaranteed the ground forces dedicated air support forces and assured the autonomy of the strategic air forces, hampered effective use of all available air assets in both the direct support and strategic missions when the situation demanded. A copy of this report has been reproduced and attached to this study as Appendix 1.

Montgomery Pamphlet: Field Marshal Montgomery originally wrote his pamphlet, "Some Notes on High Command in War," as a report summarizing his experiences and the insights he had gained in the employment of the British combined arms team in Egypt and Libya in 1942 and 1943. He periodically revised and expanded this treatise throughout the rest of the

war. The section dealing with airpower is cogent and well conceived. It reflects a grasp of the inherent attributes of airpower, the principles of air war, and the necessary priorities to be established for its successful prosecution.

PERSONAL PAPERS

Kuter Papers: Most of this collection is held by the US Air Force Academy Library and was, unfortunately, unavailable to this researcher. However, there is one box of Gen. Kuter's papers in the archives of the USAFHRC at Maxwell AFB. There were a number of interesting documents contained in that box, several of which were useful in preparing this thesis. Included among these were letters and memoranda written by or to Gen. Kuter, or those with whom he had close contact. There is also an excerpt from the official RAF history of World War I which the general appears to have found useful during his tenure as an instructor at the Air Corps Tactical School (ACTS).

Particularly illuminating among these, although having only an indirect bearing on this study, was a letter from Gen. Marshall to Dr. Edward L. Bowles, scientific adviser to the Secretary of War. It is priceless for the additional light it sheds on the character and vision of George Marshall. Dated 18 August 1944, the letter is a request from Gen. Marshall for Bowles to intensify and coordinate the research and development activities surrounding radar. It was the general's intent that ground control intercept radar be developed further in order to adapt it for, not close air support, but rather target acquisition for, and control of, tactical aircraft attacking surface targets far in advance of ground troops. In other words, Gen.

Marshall was seeking a more offensive and effective use of airpower (i.e.: air interdiction and battlefield air interdiction) than keeping it closely tethered to the advancing ground forces.

Another interesting series of documents within this collection is an exchange of letters between Gen. Arnold and Gen. Kenney, Commanding General of the 5th Air Force in the Southwest Pacific area. It is found here because Arnold, on receipt of a letter from Kenney in June 1943 which inquired about putting the words "...attack aviation...back in the Air Corps dictionary," sent a memo to Gen. Kuter directing him to "prepare a suggested reply....bring[ing] out the fighter bomber and why it was necessary." <2>

Kuter did so, pointing out that he had never known Kenney to seek "anyone's approval of [his] extraordinary vocabulary before." <3> This was an obvious reference to their tenure as instructors together at the ACTS during the 1930s. Kenney and Capt Claire Chennault were among those officers renowned throughout the Air Corps for their 'extraordinary vocabulary' which was often heard rattling the rafters of the schoolhouse when the subject of pursuit versus bomber arose. <4> Gen. Kuter went on to say that the term "attack aviation" was not only redundant, but also was incorrect because it implied that aircraft, regardless of type, which were engaged in tactics designed for the direct support of surface operations constituted an entirely different class of aviation. He concluded that there were "...three classes of aviation - bombers, fighters, and reconnaissance..." and that all of them, using a variety of tactics, against a variety of objectives, supported surface operations either directly or indirectly. <5>

MEMOIRS

Tedder: Preeminent among the memoirs used for this study was Marshal of the Royal Air Force Lord Arthur W. Tedder's With Prejudice. Tedder was far more politically astute in the timing of its publication than were the leaders of the AAF (see below). In 1966 he was in a position to rebut, on the strength of documented evidence, the scurrilous charges and one-sided accounts of those who had previously sought to rationalize their own difficulties by blaming, or ascribing selfish motives to, other people and organizations. Among the most notable of these were the memoirs of Adm Andrew Cunningham, Royal Navy, and Samuel Eliot Morrison's Two Ocean War. In the preface to Tedder's memoirs, by way of explanation for their title and tardiness, he expressed disappointment in the various personal and official histories written to that point and stated:

I mean to record the course of events as I saw them. I shall be as objective as I feel it possible to be, but I have no intention whatever of departing, for any reason, from my own honest opinion as to events and personalities. So often, people make great play about being completely unprejudiced. Frankly, I am completely prejudiced, and I accept as a guide and as a warning, Goethe's saying: 'I can promise to be upright but not to be unprejudiced.' <6>

In checking Tedder's account against the facts as found elsewhere, it is apparent that he was true to his word of being upright. However, his prejudice is only apparent in his insistence on telling, as commentator Paul Harvey would say, "...the rest of the story."

Eisenhower: Gen. of the Army Dwight D. Eisenhower's Crusade in Europe is a broad brush coverage of his impressions of events he

participated in or witnessed during his tenure as senior Allied commander in Europe. It is well written and presents a fairly well balanced view of the land war in the Northwest African, Mediterranean, and Northwest European theaters. He devotes only about 70 pages to Northwest Africa and about half of this is spent discussing the various touchy political problems he encountered there as Supreme Commander.

One of these was the dilemma posed by the necessity of having to ensure the success of amphibious landings on Vichy French soil but at the same time being constrained by the necessity of minimizing damage and casualties to the French in hopes that it might lessen their resistance and persuade them to change sides. <7> Another was his use of the Vichy French Admiral, Jean Darlan, in the military government of French North Africa after the French capitulation. Considering his tendency to equate other European governments 'friendly' to Germany with fascism, Eisenhower's perspective on the Darlan Affair is interesting, especially so in light of subsequent events involving Gen. Patton's use of ex-Nazis in the administration of occupied Germany. <8>

Eisenhower's treatment of the Kasserine crisis is very well balanced. If anything, he is rather too hard on himself in that connection and almost embarrassingly generous toward the II Corps commander, Maj. Gen. Lloyd R. Fredendall. He also has some generous things of a general nature to say about the air forces. One of these includes a magnanimous account of the extenuating circumstances behind a major blunder committed by the AAF. A Group of B-17s flown by green crews was sent to attack Rommel's forces in the Kasserine Pass, got lost in bad weather, and bombed a town behind Allied lines 100 miles from Kasserine. <9> However, as a whole, his

treatment of air forces and their importance to the success of that and subsequent campaigns is generally superficial.

Robinett, Armor Command: This is also a candid, yet fairly objective book. In it, Brig. Gen. Paul M. Robinett records his experiences, observations, and impressions of the people, events, and circumstances he encountered during World War II as commander first of the 13th Armored Regiment and later of the 1st Armored Division's Combat Command B (CCB). It is a far better account of the 13th Regiment and CCB than the actual unit histories and is filled with references to both Allied and German air activity. His observations about air-ground support and coordination ran the gamut from envy (of the Wehrmacht) and exasperation (about the AAF) to wistfulness (for lost opportunities) as Allied air superiority was eventually achieved. Worthy of note, however, is the fact that even by the end of the book, which coincided with the end of the campaign, he never seemed to have made any connection whatever between the relative dearth of German planes at that time (along with the resultant freedom of maneuver that condition granted) and anything the Allied air forces might have been up to when not buzzing constantly about overhead.

Rommel, The Rommel Papers: While not exactly a memoir in the conventional sense, this book, written in part by Field Marshal Erwin Rommel himself, his son Manfred, and his former chief of staff, Gen. Fritz Bayerlein, probably comes close to something Rommel might have done himself had he lived through the war. Compiled and edited by B.H. Liddell Hart, it is compelling reading for anyone interested in modern mobile warfare, the Afrika Korps, or Rommel himself. Especially worthy of note are Rommel's comments on the difficulties of doing battle with an enemy

whose air force, by virtue of having achieved and maintained air superiority, is free to strike with impunity one's rear areas, lines of supply, and troop concentrations.

Patton: Although fascinating for the window it provides on the soul of Gen. George S. Patton, War As I Knew It was of little value in the preparation of this thesis. Disappointingly, there is a significant gap in the book.

Immediately following the war, drawing on his diary and letters to his wife, Patton, according to the introduction by Douglas Southall Freeman, deliberately toned down or excised much of the frequent and sharp-tongued criticism which was an integral and ever-present part of the Patton persona. Freeman claims that Patton did this purposely because at the time he had made such criticisms, he often did so with an eye to getting quick, decisive results rather than any attempt at speaking gospel. Patton, realizing in the cold light of retrospect, however, that many of those criticisms were either unwarranted or gratuitously harsh, elected not to include them in his memoirs unless he felt they were valid and vital to air in the interest of national security.

Basking in the glow of victory while composing his memoirs, the general must either have felt a great deal of magnanimity toward the various tormentors whom he had excoriated so bitterly in Tunisia, or he had by then reevaluated his motives for the excoriation. In any event, if Freeman's assertion was correct, Gen. Patton must indeed have devoted the better part of his diary and letters between February and May 1943 to disparaging people, organizations, and things there, for War As I Knew It contains little

on Northwest Africa in general and virtually nothing about the conduct of the Tunisian campaign.

ORAL HISTORIES, INTERVIEWS, AND CORRESPONDENCE

These are divided into two categories. The first is composed of those interviews and oral histories conducted by professional historical researchers. The second category consists of interviews and correspondence the author of this study conducted with and received from veterans of the North African campaign.

Based on interviews of key participants in significant historical events, the USAF Oral History Program traces its roots back to the AAF's "Air Room Interviews" conducted and recorded by the A-2 section of the Air Staff during World War II. The interviewees of the Air Room Program were senior officers and combat leaders recently returned from combat zones. Originally classified, some of these interviews show remarkably greater candor in the discussion of mistakes and lessons learned than most of the official reports submitted through channels by the same men in the same time frame.

Kuter Air Room Interview: The transcript of the Air Room Interview with Gen. Kuter upon his return from Northwest Africa was quite enlightening. He was far more candid in his comments and criticisms, not only of mistakes made by ground forces, but also of the blunders committed by air forces during his tour of duty with the NATAF. A copy of this interview is attached to this thesis as Appendix 2.

Kuter USAF Oral History Program Interview: The current Air Force Oral History Program is the lineal descendant of the AAF's Air Room

Interviews. Until the advent of Project Warrior, the Oral History Program consisted of the tapes and transcripts from oral history interviews conducted by USAFHRC historians. The subjects of these interviews were prominent figures in Air Force history. In 1974 two USAFHRC historians interviewed Gen. Kuter over a period of four days at his home in Naples, FL. The transcript of these interviews comprises two volumes including, at the general's recommendation, an appendix containing an outline and notes for the memoir he had started. It was fortunate he made this recommendation since he died before the memoir was completed.

The interviews and the uncompleted memoir cover the general's career from his days as a West Point Cadet through and past his retirement from active service. They contain his account of many of the most crucial events in the history of the Air Force and his observations on many of the most well known and lesser known people who figured prominently in that history. They are extremely interesting and valuable for that reason because, although not generally recognized as such outside (or even by many within) the Air Force, Kuter himself was a key participant in, or eyewitness to, most of the truly critical events from 1929 on.

Especially valuable are his accounts of such things as: the War Department's investigation into the "heretical" activities of the ACTS (Kuter was an instructor there--the investigator, Gen. McNair from the War College, had no objections to their curriculum once he actually read it); his relationship with Gen. Marshall (who, over the objections of Gen. Arnold and many other senior Air Corps officers, promoted Kuter from the grade of major to brigadier general in two jumps over a period of only two months--the enmity caused by this among Air Corps and other Army old

timers was undoubtedly a factor in the lack of recognition accorded him); and his role as the Deputy Commander of NATAF, the result of which was FM 100-20.

Warrior Studies: In 1982 Air Force Chief of Staff Gen. Lew Allen, Jr. initiated Project Warrior in an attempt to:

...create and maintain within the Air Force an environment where Air Force people at all levels can learn from the past and apply the warfighting experiences of past generations to the present.
<10>

One of the first products of this project was the USAF Warrior Study, Air Superiority in World War II and Korea: An Interview with Gen. James Furgeson, Gen. Robert M. Lee, Gen. William Momyer, and Lt. Gen. Elwood R. Quesada. Dr. Richard H. Kohn, Chief of the Office of Air Force History, assembled a group of four prominent retired Air Force general officers who had held key leadership positions in the Tactical Air Forces. He conducted a group oral history interview with these officers focused on air superiority because, as Kohn put it,

...it is the crucial first element in all air operations and because it seemed to be neglected by a military establishment that so quickly dominated enemy air forces in the last two wars. There is a need to know more about air superiority: what it means, when it is necessary, and how it can be achieved operationally when the airspace is contested. The careers of each of the participants reveal a long association with air superiority--the theories and operations. <11>

Interestingly enough, all four of these participants had held key positions as staff members or subordinate commanders in either 9th or 12th Air Forces, the two US Tactical Air Forces dedicated to the support of

ground forces in World War II. One of these, Lt. Gen. Elwood "Pete" Quesada, is so highly regarded by the US Army for the activities of his IX Tactical Air Command (TAC) in support of the 3rd (US) Army that he was inducted into the Fort Leavenworth Hall of Fame in 1988. This book was most valuable for the insights of combat experienced air leaders on the prioritization of tasks, the reasons for that prioritization, and the command and control necessary to ensure the prioritization was done correctly.

Author's Interviews/Correspondence: Some forty-five years after the battle, the memories of its veterans might seem somewhat suspect. However, as one might expect, these are some of the most fascinating sources to be found. Most of these men, although ranging in age from their 60s to their 90s, still possess robust health and keen minds. Occasionally the memories falter on precise details, but in the main, names, places, and dates (or at least the approximate time frame within the chronological context of the campaign) remain astonishingly vivid and accurate.

SECONDARY SOURCES:

BOOKS

Craven and Cate, The Army Air Forces in World War II: This series, in the original seven volumes edited by Wesley F. Craven and James L. Cate, published between 1948 and 1958, is mandatory reading for any serious student of the AAF and its role in the war. Volumes I, II, III and VI of the original series plus a more recently produced companion volume, Combat Chronology, 1941-1945 compiled by Kit C. Carter and Robert Mueller in 1973, were indispensable in the research for this study. The series is extremely

well written and a far more balanced account of the events in which the AAF participated than most other official histories encountered. This can probably be attributed to the fact that, as the foreword to Vol. 1 states, "...after the United States entered World War II, the Army Air Forces was among the first organizations to display an active interest in maintaining a historical record." In June 1942 Gen. Arnold directed that a staff of professional academic historians be secured to prepare, in his words, "...a running account of Army Air Forces participation in all military actions in all theaters." <12>

Gen. Kuter, then Deputy Chief of Air Staff for Plans, wrote the implementing directive. Significantly, he did so with an eye to ensuring that the unvarnished truth, 'warts and all', be preserved as a record not only of what had been done and what had succeeded, but also, and more importantly, what had not been done that perhaps should have been, what had failed, and why. As he explained in the directive on 19 July 1942:

It is important that our history be recorded while it is hot and that personnel be selected and an agency set up for a clear historian's job without axe to grind or defense to prepare. <13>

This resulted in the first volume's publication just six years after the events it recorded while the last volume dealing with combat operations was published only eight years after hostilities ended. These first five volumes dealt with prewar plans, doctrine, and organization in addition to combat operations from before America's entry to the war through V-J Day. The final two volumes dealt with training, personnel, equipment, and logistics.

There are several remarkable aspects about the series, not the least of which is the candid, concise, and coherent writing. Its most remarkable feature, however, when measured against the standard set by other official histories, is the consistency of quality from one volume to the next and also the fact that any information included which pertains to the other services was thoroughly researched and documented citing a service representative balance of primary sources. Also refreshingly absent is any malicious ascription of petty, venal motives to the officers of those services for their errors in judgment, honest mistakes, or simple differences of opinion based on differing tactical perspectives.

Howe, Northwest Africa: Siezing the Initiative in the West: This volume of the US Army's "Green Book" series, The US Army in World War II, presents the US Army's perspective on operations in Northwest Africa from the planning phase for Operation Torch through the German surrender there in May 1943. As author Dr. George F. Howe explained in the preface to this valuable work:

The historical evidence, even if oppressively bulky, was rich in variety....[and] made it possible to construct a history of the operations by the U.S. Army in context, that is, with due regard for the activities of the other Military Services and of the British and French allies.

During the five years from 1947 to 1952...the plan was...adjusted to make this narrative a history of two opposing coalitions by tracing the parallel strategic and tactical decisions from the heads of governments along the chains of command to execution in combat zones. During this process it was kept in mind that interest in the record of the U.S. Army must not be submerged by all that is implied in the phrase, in World War II.
<14>

Despite the promise of "...due regard for the activities of the other...Services," the "interest in the record of the U.S. Army" was assuredly not submerged. While Howe did not succumb to the temptation to take cheap shots and ascribe selfish motives to the officers of other services when their tactical judgments differed with those of US Army ground officers, he did not always tell both sides of, or the whole, story. <15> (See Patton-Coningham incident, Chap. 8, this study.) In addition, there are points in the narrative, starting with the first Chapter, that would seem to credit to divine intervention the effects wrought by the efforts of other services. For example, in the background information he provides on operations in the Mediterranean Theater prior to the introduction of US Army ground forces there he states:

In July 1942, Rommel's army got as far inside Egypt as the El 'Alamein position, some sixty miles southwest of Alexandria, before being held up by lack of supplies and the opposition of the British Eighth Army. <16>

How exactly Rommel's lack of supplies and the resultant condition of his army had come about so that the Eighth Army could stop them, after its own headlong retreat of more than a month, remains a mystery in Howe's book. It was however, no mystery in Tedder's book...or Rommel's either. The incessant pounding of Rommel's forces from the air by the Western Desert Air Force (WDAF) and of his lines of supply by the RAF airmen and Royal Navy (RN) submariners stationed on Malta were the actions responsible. <17> Also worthy of note, but unmentioned here, is the fact that despite occasionally horrible congestions of troops and vehicles (absolutely ideal air-to-ground targets) during its long retreat, the Eighth

Army was never seriously attacked by the Luftwaffe. Here again, the RAF is the unsung hero.

However, despite this slight tendency occasionally to overlook the contributions of the other services to the overall campaign (usually in instances where that contribution was made in operations in which ground forces were not directly involved) it must be said that Howe's book is first rate. With few exceptions, his account is well balanced, candid, and scrupulously researched. Although occasionally incomplete, what he writes about the other services is never inaccurate. As part of a complete appreciation of the sea-air-ground campaigns in and around North Africa, this book is definitely one of those on the mandatory reading list.

Pogue, George C. Marshall: This four volume biography by Dr. Forrest C. Pogue is the wonderfully well written biography of one of the truly great men America has produced. In order to understand the United States' participation in World War II it is essential to know George Marshall. This account, the only authorized biography, helps immensely in the acquisition of that knowledge. The United States is beholden to Marshall, as to no other single individual, for the victory in World War II. Certainly, the US Air Force is in Marshall's debt for even being permitted to assume its rightful and necessary role in the course of that war.

Despite the worth of these volumes as literature and history, Dr. Pogue failed to keep a promise he made in the preface to volume two, Ordeal and Hope, 1939-1942. Faced with deadlines and an overwhelming wealth of material, Pogue had elected not to address Marshall's relationship with, and importance to, the AAF in that volume. However, he promised to do so in the third volume, Organizer of Victory, 1943-1945. Unfortunately, he seems

to have been so overwhelmed by the scope of the third volume that he never really devoted the depth to the subject his promise in volume two had seemed to imply he would. This is a shame, for the very special relationship between Generals Marshall, Arnold, and Kuter deserves special attention in the context of their combined efforts to do what they believed was right for the country with regard to airpower. Under Gen. Marshall's wisdom, tutelage, and forbearance, and the vision, drive, and intelligence of Arnold and Kuter, the AAF grew from an insignificant, obsolescently equipped organization to the mightiest air force the world has ever seen, before or since.

Murray, Strategy for Defeat, The Luftwaffe 1933-1945: This book, written by Dr. Williamson Murray, is very interesting reading and perhaps of more value for enumerating the lessons learned in defeat by the Luftwaffe than any similar volume dealing with the victors. Dr. Murray emphasizes the crucial roles that industrial planning and mobilization, as well as production management, play in modern warfare. In his discussion of Northwest Africa he takes the broad strategic and operational level views, relating operations there to the impact they had on other theaters and vice versa.

Bergerson, The Army Gets an Air Force: This book, although crucial to understanding the rivalry between the Army and the Air Force over the control of tactical air assets in the post-World War II era, is not what its title implies. Apparently submitted originally as a doctoral dissertation at Whittier College, the book's subtitle, "Tactics of Insurgent Bureaucratic Politics," gives a far more accurate word picture of what the book really is. That is a case study of, as Bergerson calls it, "bureaucratic insurgency" -- a primer, if you will, for aspiring Ollie Norths. Although the development

of Army Aviation serves as the framework in which the case study is developed, this is not a true history in any real sense of the word. His preface concedes that.

His motivation in the preparation of this particular study was based on his desire to learn more about the origins of an organization, Army aviation, with which he was intimately associated as a soldier in the 1st Air Cavalry Division in Vietnam. He "...wanted to know where all those helicopters came from. [He] also wanted to know where the war came from." <18>

Confessing that the project had been a failed attempt to exorcise his own personal demons, "[his] hope for the book itself [was] more positive." Despite this hope, however, he admitted that he realized:

...the difficulty of attaining accuracy when so much of the data are drawn from interviews with persons who received guarantees of confidentiality and anonymity. Such necessary protection of sources may unintentionally foster embellished recollections and other distortions. The fact that there will be no later challenges directed to interviewees must reduce some of their inhibitions to embroider history. So much of the story of Army aviation is colored by rivalries, ambitions, friendships, and even matters of life and death, that it is exceptionally difficult to discern the truth--if there is such a thing as 'truth' unaffected by human perceptions. <19>

Given that so much of his data are drawn from anonymous interviewees, and that so little attempt is made at verifying the accuracy of that data against open sources, one is left with the impression that perhaps the framework he chose for his case study might be more aptly described as a matter of human perception unaffected (or only marginally so) by truth. For example, describing various hearings held by congressional supporters of Army aviation to justify additional procurement of armed helicopters

during the early 1960s, Bergerson makes the following extremely blunt yet wholly unsupported allegation:

Another close friend of Army aviation was Congressman Otis Pike, who chaired the 1965 close air support hearings during which witnesses told of the failures of the Air Force to support the Army in Vietnam combat. <20>

In the first place, that these close air support hearings were even held is difficult to substantiate on the basis of Bergerson's citations. The pages in the Congressional Record which he references contain absolutely no mention of them, let alone the following transcript of "expert" witness testimony.

MR. [REPRESENTATIVE] PIKE: As you sit on the ground and you look up in the sky, you don't have any trouble finding aircraft which were designed for air superiority, do you, air-to-air superiority?

GENERAL ODEN: Yes.

MR. PIKE: And you don't have any trouble finding aircraft which were designed for these long-range interdiction missions, do you?

GENERAL ODEN: No, sir.

MR. PIKE: Can you find one that was designed for close air support?

GENERAL ODEN: Well, the experts, of course, Mr. Chairman, would tell you that they design for both.

MR. PIKE: General, I consider you an expert and I am asking you, once again, for your personal opinion.

GENERAL ODEN: No sir; I don't think they are designed for close air support. <21>

Gen. Delk McCorkle Oden, a former director of Army aviation, was quite a bit off the mark with his "expert" testimony. For one thing, his observation that there was no shortage of "air-to-air superiority" aircraft in 1965 was flat wrong. In 1965, the most, in fact, the only advanced

"air-to-air superiority" aircraft USAF possessed in Southeast Asia was the McDonnell F-4C Phantom II. This aircraft had been redesigned and developed from the Navy's fleet defense version, the F-4B, under the Air Force's Specific Operational Requirement (SOR) 200, "covering the entire tactical mission--close air support, interdiction, and counter air." <22>

Gen. Oden's "expert" testimony regarding the lack of aircraft specifically designed for close air support is also at odds with the facts. At the start of 1965, the Douglas A-1 Skyraider, a conventionally powered World War II vintage attack aircraft, comprised almost a quarter of the USAF order of battle in Vietnam. Also at that point in time, there were numerous other World War II vintage ground attack planes, such as Douglas B-26 Intruders, and a large number of North American AT-28 Trojans. Additionally, by the end of 1965, "Puff the Magic Dragon," the G.I.'s nickname for the Douglas AC-47 Skytrain (or Spooky) gunship, was beginning to make its presence quite effectively known. All of these aircraft had been specifically designed or subsequently specially modified for the close air support role and, in fact, were ill-suited to anything else. <23>

A final noteworthy feature of Gen. Oden's "expert" testimony about Air Force failures in Vietnam is that, according to Bergerson, Oden did not serve there until after these hearings took place. <24> Robert F. Futrell, who documented the USAF's early involvement in Vietnam, on the other hand, confirms Oden's presence in Vietnam prior to the 1965 CAS hearings. In mid-1964, Gen. William C. Westmoreland, Commander, Military Assistance Command, Vietnam (MACV), directed Oden, who headed US Army Support Command, Vietnam, and USAF Maj. Gen. Joseph H. Moore, 2nd Air Division commander and a friend since boyhood of Westmoreland's, to shore up

American air support of troop movements in response to increased Vietcong activity. The Moore-Oden agreement specified that if too few fighters were available, "...extra armed helicopters would be used." <25> This bit of information reveals an interesting aspect of the alleged Air Force "failure."

As early as June 1962, in an effort to ensure that adequate Air Force support was provided for the increasing scope of the air-mobile operations in-country, Gen. Paul D. Harkins, then MACV Commander, had ordered that armed tactical USAF aircraft were to accompany all helicopter assault missions "unless the unit commander judged it unnecessary." So great was the fear of Vietcong espionage, and so minimal was the trust in the operational and communications security of the air operations center, that Air Force support was requested only about 10 percent of the time. <26>

While there were obviously compelling reasons for not requesting air support under the circumstances cited, it seems rather self-serving to condemn as a "failure" to provide support, the absence of a service which has not even been requested. It is perhaps only coincidental that this "failure" also conveniently provided justification to Congress for the funding of additional helicopter gunships. It is clear that the story upon which Bergerson's case study is based is composed of a great deal more "perception" than fact. For a more balanced (and probably more factual) account of the development of Army Aviation, see novelist W.E.B. Griffin's Brotherhood of War series, particularly his 1983 book, The Majors and his 1988 volume, The Aviators.

General Air Force Histories: A Few Great Captains and Forged in Fire, by Dewitt S. Copp, and Robert F. Futrell's Ideas, Concepts, Doctrine: A History of Basic Thinking in the United States Air Force, 1907-1964 are

all mandatory reading for anyone claiming an interest in, or knowledge of, the Air Force's philosophical and doctrinal roots. As a minimum, they should be read by any serious students of history tempted to subscribe to the revisionist charge that the Air Corps developed and adopted the strategic bombardment theory in order to justify its independence from the Army. <27> If nothing else, the documentation of the lengths to which elements in the War and Navy Departments went to obstruct the development of airpower and air doctrine may help give a somewhat better understanding of the antipathy of many in the Air Corps toward those agencies. <28>

Overy: The Air War, 1939-1945 by Richard J. Overy is the best single volume historical study of the integral role airpower played in weaving the immense, complex, and tragically human tapestry that was World War II. The book provided valuable background information for the preparation of this study. It is a must for any airman who would overemphasize the role of airpower in war. As Overy says in his introduction:

By itself the air war does not make much sense....Air power had a complementary rather than an autonomous role to play. As a result the air war also lacks historical autonomy.... The first purpose of any history of the air war is to avoid overemphasizing the role of air power. The air war must remain a component of the wider war and can only be fully understood in a strategic context of which it forms only a part. <29>

HISTORICAL STUDIES, THESES, AND RESEARCH PAPERS

These are a great place to start. The information presented in them gives the researcher a good feel for the substance of the issues, opinions

and controversies, if any, surrounding his chosen topic. Reviewing the notes and bibliographies of these is also probably the quickest method of accumulating sources for the review of literature.

Gabel, "The GHQ Maneuvers of 1941": In its assessment of air-ground cooperation in the pre-war period and early in World War II, this dissertation is fairly representative of the body of work completed in the postwar period concerning the subject of air-ground cooperation in the US Army during World War II. Unfortunately, that body of work is largely based on a single study by only one man. An examination of Gabel's dissertation and its bibliography reveals his analysis of air doctrine and his understanding of the motivation of airmen rely almost exclusively on the interpretations and assessments found in a single study written by Dr. Kent R. Greenfield. <30>

Greenfield, Army Ground Forces and the Air-Ground Battle Team Including Organic Light Aviation, AGF Historical Study Number 35: This study was written by Dr. Kent R. Greenfield while he was Chief of the Historical Section, Army Ground Forces. It is comprehensive, well written, and thoroughly documented. There is however, a distinct bias in Greenfield's evaluation of air doctrine. Also, his assessment of the AAF's motives behind, and the mitigating circumstances surrounding, its admitted failure to provide adequate forces for air-ground training is decidedly slanted. In his analysis of air-ground cooperation in Northwest Africa he totally neglects the air side of the story, again implying that the motivation was stupidity and/or churlishness on the part of the AAF. Since it is otherwise a well researched and necessary work on an important subject, this aspect of the study is most unfortunate because it seems to have been

accepted as the definitive work on the subject by almost all researchers since its publication.

Perhaps this bias was present because, as a non-flyer, Greenfield lacked a suitable frame of reference for making evaluations about the factors impinging on air-ground coordination from the airman's perspective. It may also be attributable to Greenfield's having begun the study about the time of Gen. Leslie J. McNair's death. McNair was killed in France by bombs dropped from AAF heavy bombers in July 1944. The unstinting praise accorded McNair in the study indicates that Greenfield felt the deepest regard and admiration for the general. As Chief of the Historical Section of the AGF, Greenfield had worked directly for McNair who was the Commanding General of the AGF. <31>

McNair's tragic death in Normandy occurred during Operation Cobra, the Allies' breakout from the beachhead at St. Lo in July 1944. That breakout was preceded, and, in fact, only made possible by an extremely intensive aerial bombardment conducted under extraordinarily difficult tactical circumstances. The friendly casualties resulted from a combination of human error on the part of some aircrews, the difficulty of the circumstances, and the stubborn refusal of 1st (US) Army commander, Gen. Omar N. Bradley to heed the advice and warnings of airmen regarding the practicality and feasibility of his insistence on certain specific details of the air operations needed to support his plan. Despite this regrettable amicide -- some 700 friendly casualties -- in the long run the operation undoubtedly saved thousands of Allied lives by putting an end to the bloody stalemate in the hedgerows. <32>

Given Greenfield's obvious regard for McNair, the coincidental timing of McNairs's death and the undertaking of this study may well have colored Greenfield's assessment of AAF actions and motives in the study. In any event, in 1963, almost twenty years after writing Study No. 35, Greenfield wrote American Strategy in World War II: A Reconsideration. In that book he made a far more objective analysis of the mitigating circumstances affecting close air-ground cooperation early in the war. He also revised his previous assessment and acknowledged the efficacy of the AAF effort in strategic cooperation with land and sea forces throughout the course of the war.

Greer, The Development of Air Doctrine in the Army Air Arm, 1917-1941, USAF Historical Study Number 89: This study was written by Dr. Thomas H. Greer for the USAF Historical Division in 1955. It does exactly what its title says, relying on official Air Force records and interviews with officers who had been intimately involved with the development of that doctrine. As previously mentioned in the discussion of prewar doctrinal material, the treatment of concepts and ideas examined at the Air Corps Tactical School is worthy of special note.

Russo, "Kasserine: The Myth and its Warning for AirLand Battle Operations": This was a research paper written in 1985 by Lt Col Alan M. Russo, a US Army officer in the Air War College class of 1985. It evinces a lack of stringent academic standards on the part of at least one Air War College faculty member that year (Russo's research adviser). This paper's only redeeming value is that it provided a point of departure for the research process of this thesis, and, when re-read during periods of

flagging enthusiasm, served as a continuing source of inspiration to "carry on" and present a more balanced view.

Hightower, "The History of the United States Air Force Airborne Forward Air Controller in World War II, the Korean War, and the Vietnam Conflict": This study was a Master of Military Art and Science (MMAS) thesis written by a US Air Force officer student at the US Army Command and General Staff College. The title is self-explanatory. Hightower's background as a Forward Air Controller (FAC) and CAS pilot, as well as his intimate knowledge of the Tactical Air Control System (TACS) and the Army Air Ground System (AAGS), are evident. He does a good job tracing the history of command and control at the tactical level of individual airplanes and small formations of airplanes by forward air controllers. His thesis is that the Air Force should examine its past to help determine how to do business in the future.

CHAPTER 2 NOTES

<1> John Terraine, A Time for Courage, The Royal Air Force in the European War, 1939-1945 (1985): 194-205, 607-611.

<2> Memo, Arnold to Kuter, 29 June 1943, Kuter Papers, Box 1, US Air Force Historical Research Center, Maxwell AFB, AL. (Cited hereafter as USAFHRC.)

<3> Memo, Kuter to Arnold, 1 July 1943, Kuter Papers, USAFHRC.

<4> Martha Byrd, Chennault, Giving Wings to the Tiger (1987): 40.

<5> Memo, Kuter to Arnold, 1 Jul 43, Kuter Papers, USAFHRC.

<6> Arthur W. Tedder, With Prejudice (1966): preface.

<7> Dwight D. Eisenhower, Crusade in Europe (1948): 85-88, 99-104.

<8> Eisenhower: 104-114, 433-434.

<9> Eisenhower: 145.

<10> Richard H. Kohn and Joseph P. Harahan, eds., Air Superiority in World War II and Korea (1983): v.

<11> Kohn: 2.

<12> Wesley F. Craven and James L. Cate, eds., Plans and Early Operations, January 1939 to August 1942 (The Army Air Forces in World War II) (7 vols., 1948-1958) 1: viii-ix.

<13> Craven and Cate 1: ix.

<14> George F. Howe, Northwest Africa: Seizing the Initiative in the West (The US Army in World War II: Mediterranean Theater) (1957): vii.

<15> Howe: 573; Tedder: 410-411.

<16> Howe: 9.

<17> Tedder: 306-317; Erwin Rommel, B.H. Liddell Hart et al, eds., The Rommel Papers (1988): 236, 245, 256, 259.

<18> Frederic A. Bergerson, The Army Gets an Air Force: Tactics of Insurgent Bureaucratic Politics (1978): xi-xii.

- <19> Bergerson: xi-xii.
- <20> Bergerson: 116.
- <21> Bergerson: 117.
- <22> Marcelle S. Knaack, Post-World War II Fighters, 1945-1973, (1986): 266.
- <23> Robert F. Futrell, The Advisory Years to 1965 (The US Air Force in Southeast Asia) (1981): 268; Jack S. Ballard, Development and Employment of Fixed Wing Gunships, 1962-1972 (The US Air Force in Southeast Asia) (1982): iii, v, 28, 32, 33-36.
- <24> Bergerson: 117
- <25> Futrell: 208, 225.
- <26> Futrell: 142-143.
- <27> Christopher R. Gabel, "The GHQ Maneuvers of 1941," (PhD Dissertation, Ohio State University, 1983): 59, 61.
- <28> Dewitt S. Copp, A Few Great Captains (1980): 44-47, 423-426
- <29> Richard J. Overy, The Air War, 1939-1945 (1981): 1.
- <30> Gabel: 57-74, 97-103, 310-313, 327-329.
- <31> Kent R. Greenfield, Army Ground Forces and the Air-Ground Battle Team, Including Organic Light Aviation, Army Ground Forces Study No. 35 (1948): 7-8.
- <32> John J. Sullivan, "The Botched Air Support of Operation Cobra," Parameters 18 (March 1988): 97-110.

CHAPTER 3

METHODOLOGY

Having established the place and the point in time at which the US Army's philosophy of the command, control, and employment of airpower changed, it is necessary to pose some definitive questions to facilitate analysis of the doctrine which presumably governed those philosophies. First, was the doctrine sound? Next, since there is often a noticeable difference between theory and application, was the doctrine practiced? And finally, was there a cause and effect relationship between the soundness of the doctrine and whether or not it was actually practiced?

Since the subject of air superiority is the common thread which runs, in one form or another, through all the doctrine dealing with airpower, both before and after the 18 February 1943 North African reorganization, it is the primary theme which will be examined. In this regard, this study will analyze the extant doctrine to determine: whether there was a clear enunciation of what air superiority was; whether there was a consensus regarding the various degrees of air superiority which could or should be achieved; its relative importance to the conduct of combat operations, both ground and air; how it was to be achieved; and whether or not it was feasible, desireable, or even necessary to achieve theater, as opposed to local, air superiority.

In order to fully appreciate the significance and impact of various doctrinal sources, it is helpful to acknowledge both the audiences for whom particular pieces of doctrine were intended, and also the agencies responsible for their promulgation and periodic revision. Generally, it is possible to determine this from the numerical designation of the field service regulation or field manual being examined.

For example, field artillery subjects were covered by the FM 6-XX series. The FM 1-XX series of manuals covered aviation matters. Intended primarily for the use of field artillery and air corps audiences respectively, these manuals were written and updated by boards appointed by those branches of the service. <1> In spite of the fact that these manuals were initiated by experts within the responsible branches, they were submitted to close scrutiny, coordinated with, and ultimately approved by the War Department General Staff, under whose auspices they were eventually published and distributed.

Worthy of note here also is the FM 31-XX series of basic manuals. Compiled by committees selected by the G-3 division of the War Department General Staff, these manuals dealt with integration of separate components of the combined arms at the tactical level. Presumably, there was representation present from all branches concerned. In the case of support relationships, however, the supported branch apparently had the most influence. Again, the War Department General Staff was the final approving authority.

It would seem logical then, that there existed an audience which might be concerned with the employment of all the components of the combined arms team in concert. In fact, this audience comprised the members of all

the individual branches which would be required to operate together and the overall commanders who would be responsible for directing them. However, a detailed knowledge of the mechanics of the employment of each of the branches was certainly not vital, or even particularly interesting, to the members of the other branches or that part of the audience concerned merely with the integration of these arms into the grand schemes of operations and campaigns. For that reason, a level of doctrine was needed which fell somewhere between the 'nuts and bolts' doctrinal manuals of the individual services and the esoteric, geo-political writings and policies which governed national military strategy.

The FM 100-XX series of field service regulations supplied this level of doctrine. It was intended for the commanders of not only the combat arms, such as artillery and aviation, but all branches. As such, it was promulgated, written, and revised at much higher levels with a much broader focus than doctrine intended primarily for the individual branches. Although this was, of necessity, done by committees with representation from all branches addressed in, and concerned with, the doctrine, it must be recalled that these manuals, too, were carefully coordinated with and approved by the War Department General Staff which again had the final vote. In this manner, doctrinal purity and consistency could be maintained at the appropriate level.

This study, then, is an attempt to answer the original thesis question by examining and analyzing the doctrine which either governed or impacted the command, control, and employment of airpower. It does so by asking the questions initially posed in this chapter. However, in the hope of shedding light on the broader, implied question of whether or not the solution

adopted in 1943 is still relevant, this analysis is conducted within the framework of events which occurred in Northwest Africa, and also as part of a wider perspective on the history of air warfare as a whole.

CHAPTER 3 NOTES

<1> Robert F. Futrell, Ideas, Concepts, Doctrine: A History of Basic Thinking in the United States Air Force, 1907-1964 (1974): 57.

CHAPTER 4

FM 1-5: BASIC AIRPOWER DOCTRINE

In the immediate prewar period, the basic doctrine dealing with army aviation as an entity in its own right was found in the first Air Corps field manual ever published, FM 1-5, Employment of Aviation of the Army. This manual superseded the War Department training regulation which had governed Army aviation up to that point, TR 440-15, 15 October 1935. Although published on 15 April 1940, work on the first draft of FM 1-5 had begun early the previous October, while the coordinating draft had been approved by the Adjutant General on 26 December 1939. <1>

In the late 1930s the entire personnel strength of the Air Corps was "...less than the field artillery and less than one-eighth of the whole Army." <2> Not until 1939, in the aftermath of Hitler's bloodless triumph of intimidation through airpower, did the Air Corps begin to receive the first in a series of very large budget increases. <3> Among ground officers accustomed to the impecunious budgets of the Depression years, this sudden modernization and expansion of the Air Corps, albeit at the president's direction and swiftly followed with budgetary authority to expand and modernize the entire Army, caused a great deal of resentment. As a result, there was little representation for, and in fact, not even much interest in, air matters on the War Department General Staff. <4> Fortunately, this

situation began to change once Gen. George C. Marshall became Chief of Staff on 1 September 1939. <5>

For a little over a year prior to assuming that role Marshall had been serving first as the Chief of the War Plans Division and then, since 15 October 1938, as the Deputy Chief of Staff. The significance of the events that transpired in Munich during 1938 did not escape his notice and he exhibited a keen and active interest in educating himself about airpower.

<6> By the summer of 1939, just prior to becoming Chief of Staff, his education had progressed to a point where he felt comfortable, as one of his first official acts, in approving a War Department Air Board report which recommended "...for the first time a specific mission [for] the Air Corps...." <7>

Upon approval of this report, Lt. Col. Carl Spaatz, Chief of the Air Corps Plans Section, directed that work on an Air Corps basic doctrinal manual be completed at the earliest possible date. Earlier drafts of this type of manual had been gathering dust for years around the Office of the Chief of Air Corps, unwanted orphans in search of War Department approval. With high level interest now being shown, however, this project took definite form very rapidly. In fact, it was turned out so quickly, by so few people, it seems unlikely that much, if any, analysis of events just transpired in Europe had gone into its writing. <8>

In light of the manner in which the conflict began, this hypothesis seems valid. Although the achievement of virtually complete air supremacy had been the very first task carried out by the Luftwaffe in Poland, FM 1-5 contained no clear-cut definition of, nor even any reference to, air superiority per se. <9> It did, however, refer to "...control of the air." On

the subjects of the feasibility, desirability, or necessity of obtaining that control, the manual was, at best, ambivalent. <10>

In its introductory chapter, FM 1-5 described the functional groupings and missions of military aviation as organized in the US Army. Of the four major groupings, General Headquarters (GHQ) aviation included all combat aviation assets in the Army which were not assigned as part of overseas garrison aviation. GHQ aviation was in turn further subdivided along functional lines which included: striking (long range offensive) forces; (strategic air) defense forces; support (of ground operations) forces; and special (airlift, reconnaissance, and utility) forces. The missions of these forces were generally very similar to analogous forces in existence today. It is highly instructive though, to examine the language used in describing those missions for it reveals something of the thinking about the counter air mission and, by extension, air superiority. <11>

Referring to what is now known as "theater air superiority" or "air supremacy," FM 1-5 addressed what it called "...complete control of the air." <12> The manual asserted that "Complete control of the air..." could only "...be gained and maintained...by total destruction of the enemy's aviation." In the next sentence, however, the authors revealed their ambivalence about this concept with the insight that "Since this is seldom practicable, counter air force operations must be carried on progressively, and in most situations intensively, to provide security from hostile air operations." <13> This statement showed a great deal of foresight. It also revealed, although perhaps unconsciously, that there were, in fact, implicit limitations on the ultimate effectiveness of airpower.

The next sentence went on to say that "The impracticability of gaining complete control of the air necessitates the constant maintenance of antiaircraft defenses to limit the effectiveness of enemy air operations." <14> Whether this was an admission that offensive counter air operations were unlikely to result in the "...total destruction of the enemy's aviation..." or that they were somehow less remunerative and therefore less desirable than offensive air operations pursuing other objectives can only be surmised. There are clues, however, to be found throughout the manual which clearly imply a feeling that although, perhaps desirable, theater air superiority was probably neither feasible, nor, for that matter, entirely necessary.

In describing the mission of the striking forces FM 1-5 stated that, "A major function of these forces will be the attack and destruction of enemy aviation facilities and of enemy aviation at its bases." This statement demonstrates the authors' concern for the importance of the counter air mission. However, the choice of the phrase "A major function..." rather than "the primary function" or "the first priority" clearly suggests that the counter air mission was not afforded a specific degree of priority when this manual was published. <15>

Some basis for this omission may be found in the description the manual offered as the mission of GHQ defense forces. These forces were to provide a mobile strategic air defense force in the zone of the interior which could be rapidly shifted as necessary to defend the country's most important and vulnerable areas. In an explicit declaration of airpower's limitations as a defensive force, the manual flatly stated these defense forces were "...not intended to repel a mass attack or to afford air

protection to our entire coast line, but...[were]...designed to limit the effectiveness of air raids upon our exposed vital areas." <16>

In fact, paragraph 22 specifically stated that the establishment of local antiaircraft defenses would provide "a higher order of security for any particular installation than [would] a general antiaircraft defense." <17> It must be recalled that at the time this manual was written, the development of a truly effective early warning system (i.e. radar) which would permit the timely massing of widely dispersed air defense forces was still in the experimental stages and was largely unknown to the American military. The effective disposition of the GHQ Air Force defense forces was to be enhanced by the integration of coordinated active and passive antiaircraft defense measures under the overall guidance of "...a common authority so far as practicable." <18>

The passive defenses referred to above included such measures as camouflage, dispersion, and blackouts. Active defenses included aircraft warning services (still based on visual and auditory detection at that time), antiaircraft artillery (AAA), and aviation. Coordination between aircraft and AAA was "required only in...the immediate vicinity of the defended objective." This coordination consisted of giving AAA "priority of fire within the range of its weapons" while adding the sage advice that "air operations [should] be planned and conducted accordingly." <19>

Military aviation's mainstay for performing the defense force mission was the class of aviation known as "pursuit." The types of aircraft making up the pursuit class are now known as fighters or interceptors. In describing the characteristics and missions of pursuit aviation, FM 1-5 relegated it

almost entirely to purely defensive roles. There exists here also a noticeable degree of ambivalence:

58. ...b. Pursuit aviation is designed primarily for offensive air fighting and is employed in the anti-aircraft defense of important areas, installations and forces, and for the protection of other aircraft in flight....The requirements for anti-aircraft defense and for the protection of aircraft in flight usually will necessitate the employment of all available pursuit forces for those missions. Pursuit forces will seldom be made available for the express purpose of attacking surface objectives when enemy aviation is active. <20>

Despite the admission that pursuit aviation was "...designed primarily for offensive air fighting..." any offensive operations undertaken by fighter aircraft were clearly intended to be of a strictly tactical nature in pursuit of the aims of either antiaircraft defense or the provision of security for the "true" offensive air arm, bombardment aviation. FM 1-5 described, and concurrently downplayed, two different methods by which pursuit aviation could furnish protection for aircraft in flight: "accompanying support" and "offensive patrols." Accompanying support was the preferred method of the two and entailed close escort to ensure "...immediate protection for a particular formation engaged in an important air operation." In determining the need for such support, two factors were to be considered: the effectiveness of the enemy pursuit forces and the defensive firepower of the friendly (bomber) aircraft. <21>

In keeping with the widely held belief of the time that big, fast, well-armed bombers could always get through to their targets, the same paragraph maintained that "All aircraft in flight possess a measure of inherent security, and most aircraft possess considerable defensive

firepower." <22> In the event this was not convincing enough, there was more justification as to why pursuit aviation was not needed to provide security in offensive operations. The authors stressed the range limitations of pursuit aircraft which further restricted their utility in the escort role, concluding that "...in many situations the provision of accompanying pursuit support may not be feasible." <23> While this statement was largely true in describing the capabilities and limitations of most of the existing pursuit aircraft, the bomber-oriented conventional wisdom that pursuit had reached a technological dead-end seems to have been an implicit assumption throughout this manual. As later events were to prove, this assumption had, in fact, been a self-fulfilling prophecy.

The description and discussion of the offensive patrol method was similarly dismissive:

67. ...b. The employment of pursuit forces on offensive patrol requires the use of large pursuit forces, and is relatively inefficient. Such employment is resorted to only when several important air operations are conducted concurrently within a small area for a short time. <24>

This combination of perceived and self-imposed limitations on tactical airpower was in marked contrast with what little historical evidence that did exist regarding large scale air operations. Despite the widespread practice of bombing enemy airdromes by both sides during World War I, by far the greatest damage the opposing air forces had inflicted on one another came about as a result of large scale offensive air patrols conducted by highly mobile, centrally directed fighter groups, known by the Germans as Jagdgeschwadders and similarly by the Allies as Circuses. In fact it was

the adoption of this method of operation by German air leader Baron Manfred Von Richthofen in the spring and summer of 1917 which had enabled the Germans, despite overall numerical inferiority of aircraft, to tip the scales in favor of Germany in the battle for air superiority. <25>

German tactical aviation was aided incalculably in this effort by the simultaneous increase in long-range strategic aviation operations against the British Isles. The British public rightfully expected, and indeed demanded, adequate air defense to ensure protection against these air raids. The political pressure these demands brought to bear resulted in the withdrawal of a disproportionate number of British fighters from the Western Front. This made the struggle for air superiority even more lopsided which, in conjunction with the collapse of the Eastern Front following the Russian revolution, greatly contributed to a military situation on the ground which came perilously close to disaster for the Western Allies that spring. <26>

Very little imagination is required to speculate whether the will to continue the fight might not have evaporated in London, Paris, and Rome before it ultimately did in Berlin and Vienna. Had not the promise of the United States' industrial might and her theretofore untapped manpower pool loomed brightly on the horizon at that point in the war, the question might easily have had a profoundly different answer. <27> One cannot help but wonder what might have been the result of this balanced application of airpower had not the Kaiser simultaneously overplayed his hand in the U-boat campaign thus bringing the United States into the war.

This disregard of the only historical evidence that existed regarding airpower in war, and the consequent limitations on tactical airpower

expressed by FM 1-5, is logical and understandable only in the context of the times. It was the reflection of an obsession with the technology of the time. That technology had in turn been driven by a vision and a theory of warfare which held out an alternative to the indecisive, yet horribly bloody, wholesale carnage and suffering which had so repelled thinking soldiers during the "Great War."

The limitations imposed on tactical aviation by FM 1-5 were in doctrinal concert with the widely held and almost sacrosanct belief in the offensive power and invincibility of striking force (heavy bombardment) aviation. This belief was voiced in the statement that, although "...strong antiaircraft defenses of vital hostile installations must be given consideration in decision for an attack..." they would "...not constitute an absolute bar to making such attack." <28> Determination, leadership, tactics, and the defensive firepower of striking force aviation would see it through to its objective regardless of the odds. <29>

In essence, these qualities would ensure that striking force aviation would take its own bubble of air superiority with it wherever it went. The isolated paragraphs which contain these thoughts constitute a tiny window through which a brief glimpse can be had of the technological premise upon which was built the strategic bombardment doctrine which had developed at the ACTS during the interwar years. <30> There are suggestions sprinkled liberally throughout FM 1-5, however, which indicate the sway this technological obsession held over all Air Corps thinking.

Illustrative of the attitude it gave rise to, was the the slogan actually adopted for a while in the mid-1930s by the Office of the Chief of Air Corps: "Fighters are obsolete!" Some ACTS instructors advocated

abolishing pursuit aviation altogether. <31> To be sure, there were exceptions to this thinking. Most notable among these was Capt Claire L. Chennault, one of the ACTS instructors, and the principal voice of pursuit aviation in the Air Corps during his tenure at the school from 1931-1936. <32>

Looking to the only previously widespread combat experience air forces had had, Chennault observed that in its tactical application to the air battle, pursuit aviation had embodied, and was, in fact, the master of, those principles which had always been the key to success in battle, regardless of the medium of combat. That key was firepower, speed, and maneuverability. Because of these characteristics, pursuit had proven to be the dominant, although by no means the only, force in combat aviation. During the 1930s however, an ever increasing number of officers within the Air Corps felt that in view of then current speed, range and payload advantages enjoyed by bombers over fighters, the importance of maneuverability and offensive firepower were no longer valid principles. <33>

Chennault deplored this thinking, declaring, "Since the World War there has been no new aeronautical development or invention which renders unsound the broad principles evolved during the war." He felt that the principal lesson learned in World War I was that air superiority and, by extension, counter air operations, were prerequisites to successful operations on the surface or in the air. <34> In the era of the ascendancy of bombardment theory, however, Chennault was "...indeed, a voice crying in the wilderness." Upon his forced medical retirement from the service in 1937, the "wilderness" became quite still. <35>

The legacy he left behind, however, was that even if pursuit by itself was inadequate for the mission, some means of defense against enemy air forces was necessary. The solution was obvious. Where it was absolutely vital, defend with pursuit; however, the best way would be to destroy the enemy air force at its source: its bases, or ultimately, its factories. <36> The necessity of defending against an enemy air force by both methods posed an uncomfortable and largely insoluble paradox for airpower doctrine writers.

If the tactically offensive, but strategically defensive, measure of devoting a large part of the offensive air striking force to the counter air role was indeed the primary mission of the air force, another cherished notion would of necessity have to be subordinated. That notion was that air forces could bring such pressure to bear on an enemy's basic war fighting and industrial potential that his will to fight could be crushed by the application of airpower alone. It must be recalled that, although not officially sanctioned in the form of field manuals published by the War Department, the doctrine of the absolute invincibility and potentially decisive character of precision strategic bombardment espoused by the ACTS was at its zenith during this period. As such, this doctrine permeated the thinking of almost all Air Corps officers about airpower. <37>

The thinking went something like this: Since heavily armed bombers carried their own air superiority with them, in sufficient mass, even in the face of fierce enemy resistance, enough of them would always be able to get through to the target to ensure its destruction. Since the bombers would always get through to the target, the fastest and ultimately most economical means of bringing about the enemy's defeat was therefore to

destroy some essential element of the enemy's economy or industrial capacity which would cause a strategic or economic collapse, depriving the enemy of the effective means or will to resist. <38> Since the total destruction of the enemy's air force would admittedly require progressive and intensive operations, it would therefore be more profitable to take a more indirect approach and concentrate the offensive effort on a more manageable target or target system which might accomplish the same end. <39> In fact FM 1-5 stressed this thinking in its discussion of the employment of bombardment aviation:

37. EMPLOYMENT.-- a. The strategic air operations conducted by bombardment aviation are undertaken to nullify the enemy's war effort or to defeat important elements of the hostile military forces....Bombardment operations are divided into the following broad categories:

- (1) Counter air force operations.
- (2) Operations against ground forces.
- (3) Operations against naval forces.
- (4) Operations against joint forces.
- (5) Operations against war materiel.

b. The above categories are not entirely mutually exclusive. For example, the destruction of an aircraft factory would deprive the enemy of an important element of its war materiel and might exert an important ultimate influence on the operations of the enemy air forces. <40>

In a subsequent section dealing with operations against war materiel, the logical conclusion of the above thought was reached. This of course had obvious implications for the prioritization of a direct assault on the enemy air force which a counter air campaign would constitute.

57. NATURE OF OPERATIONS.-- Bombardment operations against war materiel usually are conducted beyond the sphere of action of ground forces. Such operations must be based upon a detailed study of the industrial capacity and organization of the

enemy territory. The bombardment operations must be planned and conducted according to a definite pattern for the accomplishment of a definite purpose. Systematic and sustained operations are conducted against the objectives selected as being the most profitable for air attack. <41>

This led inevitably to a search for objectives which would provide the fastest, most economic means to the strategic end, which was, after all, the capitulation of the enemy. In their "...detailed study of...industrial capacity and organization..." airpower thinkers were handed a providential example of just such a strategic shortcut. <42>

Maj. Gen. Haywood Hansell, in speaking at the Air War College in 1951 on the origins of the American brand of strategic bombardment theory, observed that a large part of the American aircraft industry had been brought to a virtual standstill during his tenure in the 1930's as an ACTS instructor. This happened as a result of the closure of a single factory by a flood in Pittsburgh. This factory was the sole source of a "...relatively simple but highly specialized spring..." which was a vital component of variable pitch propellers. In wars fought with high-performance propeller-driven airplanes, a lack of variable pitch propellers could ground an air force in very short order, especially if that air force were incurring combat losses of aircraft which could not then be replaced because of that shortage. <43> "For the want of a nail..." the poet had said. The quest for what were later to become known derisively as "panacea targets" was born. <44>

That RAF Bomber Command's Air Officer Commanding in Chief, Air Marshall Sir Arthur "Bomber" Harris, was the principal derider of "panacea targets," such as ball bearings or petroleum, is a fact seized upon with a

measure of glee by some historians. <45> His derision, however, and in fact, the entire British conception of strategic bombardment, was based on an entirely different set of assumptions, technologies, tactical circumstances, and values than those in operation at the ACTS during the 1930s.

To begin with, the British concept of strategic bombardment was based on the assumption that it would be possible to deprive an enemy government of its war making potential by the weight and ferocity of a direct assault, not only on its industrial and economic base, but also on its civilian population. Terror and wide-spread suffering caused by air attacks might even sufficiently weaken popular support for the war to cause the same sort of collapse which had finally ended World War I. <46>

This notion derived from the British experience as victims of this type assault from the air by German Zeppelins and Gotha bombers during World War I. That assault, alluded to earlier in this chapter, had caused a psychosocial reaction out of all proportion to the actual damage done. In fact, it was civilian pressure for protection from these first tentative strategic bombing raids and the reluctance of both the British Army and the Royal Navy to take responsibility for air defense of the home islands, which caused parliament, not British airmen, to call for the establishment of a separate and independent Royal Air Force. <47>

This assumption then determined the direction in which the technology of strategic bombardment developed in Britain. Because British air strategists felt their assault would be directed as much at the enemy's population as at his industry and economy, great precision in strategic bombardment was not particularly necessary. The RAF, unlike the US Army

Air Corps, felt no great need to develop an extremely accurate means of delivering bombs such as the Norden bombsight. <48>

This lack of bombing accuracy would be compensated for by the weight and numbers of bombs used in the attack which would have the additional "benefit" of making the terror that much more widespread. To be effective in a strategic bombardment role, aircraft needed first and foremost to possess two qualities: great range, and the ability to deliver heavy payloads. Because the addition of self-protection armament and armor would necessarily have detracted from those paramount considerations, British bombers were not generally well equipped with either. <49>

Instead, they relied on speed and surprise for self-protection. However effective in peacetime or on paper, these proved insufficient in combat, which in turn necessitated a change in tactics. That change was to do as the Germans had done in World War I when daylight attacks proved too costly. RAF Bomber Command began to use darkness to protect the attacking bombers. <50> This degraded accuracy still further which, in turn, increased collateral damage and civilian casualties even more. This was not necessarily an unfortunate or even an unwanted circumstance, however, because the terror produced by the bombing was thereby increased and so, presumably, was the pressure brought to bear on the German government. Any British airmen who may have had moral or ethical reservations about this strategy must have had at least some of their compunctions grimly mollified when the Luftwaffe shifted from the RAF to urban targets during the Battle of Britain. <51>

If Harris, ever the pragmatist, had once considered seriously the efficacy of precision bombardment, the technology and force structure he

had at his disposal, the doctrine he had been raised on, and an altogether different moral climate from the ACTS during the 1930s conspired to make it impractical, if not impossible for him to attempt it. From his perspective, the only sure and practical means by which he could ensure the destruction of key targets such as ball bearings, or oil, was to destroy the entire German economy, including, if necessary, the workers which made it run. <52> Attempts to surgically remove linchpin elements of that economy represented, in his view, placebos rather than panaceas. In the event, however, at least according to one well situated expert, Harris' estimate of the strategic situation was mistaken. <53>

To Albert Speer, Hitler's Minister of Armaments and the architect of the German wartime industrial juggernaut, the attacks on the anti-friction industry and other such weak links in the German economy posed a horrifying crisis. The crisis was met, once recognized, by dispersal, increasing antiaircraft defenses and fighter production, and in large measure, by sheer dumb luck. The Allied air forces were victims of their own faulty intelligence and more than a little wishful thinking. They overestimated both the efficiency of the Nazi regime and the damage their bombers could and were causing on any single given raid. This unwarranted optimism in turn led them to neglect one of the fundamental tenets of their doctrine: that an air offensive should be systematic, persistent, and sustained. <54> The net result was that the Allied air forces initially pursued their own strategy in a half-hearted manner.

Speer himself admitted that had the Allies been more systematic, and especially had they been more persistent in their attacks, they could have brought German armaments production to a complete standstill within a

period of only four months from the outset of the offensive. <55> Given the terrible cost of the unescorted deep penetration raids which were necessary to hit these targets, it is not difficult to understand why the Allied air forces should base their assessment of the damage these raids did more on wishful thinking than a cold, unemotional analysis of facts and probabilities.

In any event, the struggle between the War Department and the Air Corps over the theories which the strategic bombardment doctrine represented had been long and bitter. It had also resulted in such a focus of effort within the Air Corps that other vital and fundamental issues had been long neglected or purposely subordinated because they had little or even negative impact on the cause of strategic bombardment. <56>

Chief among these issues was the development of long range tactical aviation. It is conceivable that any form of tactical aviation was suspect in Air Corps circles. Money was tight and tactical aviation could only be adequately developed at the expense of long range heavy bombers. As has already been illustrated, many officers felt that tactical aviation had gone as far as technology would allow and that to put any of those scarce dollars into it might constitute a waste of resources the Air Corps could ill afford. <57>

An example of such waste which did occur was the most notable, and also the most notorious, attempt made at developing a long range tactical aircraft during the mid-1930s. In 1935, the Bell XFM-1, "Airacuda," was developed at the direction of the Secretary of War. This direction was in accordance with the War Department General Staff policy of "reducing the number of Air Corps types...in the interest of standardization, quantity

production, and economy." Apparently some 1930s style "Beltway Bandits" sold the Secretary of War and the General Staff on the idea that the proposed design, a multi-seat, multi-engine type, "would serve not only as a successful interceptor, but also as an all-purpose fighter, bomber, observation, and attack plane." The allure of the concept, especially in the austere fiscal climate of the Great Depression, is readily understandable. However, the technical difficulties encountered attempting to incorporate all the design characteristics necessary to perform all the functions desired proved insurmountable. <58>

The resulting experimental model was an aircraft which was incapable of performing any, let alone all, of the desired functions satisfactorily. It was one enormous compromise from start to finish which suited neither the big bomber apostles nor those who advocated development of a balanced air force. Chennault, himself a proponent of the long-range fighter as part of a balanced force, fought against the multi-seat, multi-function interceptor concept. He felt that while the challenge of the project fascinated the Wright Field engineers charged with its development, the enthusiasm over this project was largely the result of "too much engineering and too little tactics." Despite its dismal lack of success, the appeal of the concept was strong enough within the War Department, and certain segments of the Air Corps, to keep the XFM-1 alive as an experimental test bed and unwelcome "money-pit" as late as the summer of 1940. <59>

In later years AAF officers bitterly recalled that "...the money and energy spent on this futile project might well have been used instead to develop a long-range single-seat fighter." <60> To be sure, Air Corps reluctance about tactical aviation may also have contained an element of not

wishing to place too much emphasis on a class of aviation that was inherently better suited to performing the mission most of the rest of the army felt should be the only role of airpower: direct, close support of the land battle. <61>

This suspicion of tactical aviation was not necessarily due to a lack of appreciation for the importance of tactical missions. <62> However, the airmen felt, especially in view of their belief in its power and invincibility, that the long range bomber was capable of performing not only the strategic mission, but the tactical mission as well. <63>

Also, despite their better suitability to the support mission, long range tactical aircraft simply would not have the speed, firepower, or payload capacity which would enable them to perform the potentially more decisive strategic offensive mission. Given the level of aeronautical technology at the time, fighters and twin engined bombers were not then, nor in the foreseeable future, capable of the speed, firepower, and payload necessary to perform both roles. In the lean budget years of the twenties and thirties, funding simply was not available for the adequate development of both tactical and strategic aviation. <64> In the eyes of the airmen, the choice was clear. They chose to develop the class of aviation, long-range heavy bombardment, they felt could do both missions. More significantly, from their perspective they chose not to proceed along a path which might well prove detrimental to the development of what they felt to be the truly decisive mission. <65> Ironically, this choice nearly proved fatal to that mission when put to the test in combat a few years later.

The seeds planted by this narrow focus on a fundamentally flawed premise, the invincibility of the big bomber, were to bear bitter fruit for

the American airmen of the 8th Air Force charged with executing the doctrine in the skies over Germany during the early part of the European war. The culminating point, however, would not be reached until 14 October 1943. Tragically, it took the horrendous losses suffered by the unescorted formations of heavy bombers preceding and during the second Schweinfurt-Regensburg raid to finally shake the belief in the indomitability of the bomber. Although the bombers did succeed, largely by dint of sheer guts on the part of the aircrews, in reaching their targets despite desperate odds, the price exacted by the enemy air force for doing so was one even strategic bombardment zealots were unwilling to pay. Unescorted deep penetrations would not be made again in clear weather.

<66>

Of greater significance to operations in Northwest Africa, however, was the neglect of tactical doctrine which had resulted from the emphasis on strategic bombardment. Compelled by the War Department's Air Board to include some written expression of fealty to the ground support mission, the Air Corps had arrived at the expedient in FM 1-5 of grouping airpower into the functional forces described earlier. This was done in large measure to allay fears that the GHQ Air Force, which had been built around bombardment, might be unable, or unwilling, to devote sufficient attention to the support mission. <67>

Having made this concession, however, the Air Corps appeared reluctant to provide definitive guidance to ground commanders as to how this support should be used. FM 1-5 stipulated that:

11. GENERAL.-- A knowledge of the powers and limitations of combat aviation is a prerequisite to sound employment. These powers and limitations are derived from the characteristics of its constituent types of aircraft. These characteristics change rapidly with aircraft development. <68>

This statement leads to the inescapable conclusion that whoever was charged with the selection of objectives for, and the employment of, airpower must possess a high degree of technical and tactical knowledge about the subject. This manual, however, was distinctly unhelpful in fostering that knowledge. It devoted only one section of one chapter, a mere three paragraphs, to the topic of air operations in support of ground forces. <69>

Although generally sound advice was offered, it was of a rather tentative and insipid nature. For example, regarding command and control, the manual stated, "In general, support aviation is a theater-of-operations weapon and its maximum effectiveness is secured through centralized control." In the next line, however, it seemed to contradict this basic principle by going on to say that not only were there situations requiring decentralization, but that in so doing, the ground commander could thereby ensure "...greater promptness and better understanding in meeting the requirements of the supported unit." <70> The manual then failed to give examples of situations wherein decentralization of control might be necessary or why. Reading that, any ground commander who failed to decentralize his support aviation would have had to have possessed far greater knowledge of the capabilities and limitations of airpower than FM 1-5 presented.

Unfortunately, this knowledge was sadly lacking among ground officers during the early stages of the war. Even as late as the Normandy breakout in July of 1944, there were still some very senior, and by that time combat experienced, ground commanders who displayed an amazing degree of ignorance regarding the capabilities and limitations of airpower. Even more astonishing, however, was the blatant disregard for the concerns, advice, and even protests of the airmen who were, by then, the acknowledged technical and tactical experts in the use of airpower. <71>

FM 1-5 offered little aid for ground commanders attempting to select objectives against which their support aviation should be employed. The paragraph titled "Nature of Operations" in this section presented a laundry list of operations which support aviation might conduct during different "phases of combat." Included in the laundry list were counter air operations. <72> However, aside from proscribing targets which could "...be effectively engaged by available ground weapons within the time available...", the manual gave no particular emphasis or priority to any of these operations other than the order in which they appeared on the list. <73> Despite having given no real definitive guidance about what the objectives should be, the manual was most emphatic about who was to assign them. In the first paragraph of this section, the authors wrote:

26. GENERAL.-- ...b. Combat aviation placed in support of large units operates to further the mission of the supported command. The superior commander, under whom such support aviation is operating, is responsible for the assignment of air missions or objectives and for its employment within or beyond the sphere of action of ground forces....When combat aviation is employed for the immediate tactical support of surface forces, the requirements of the supported force will be of paramount importance in the selection of objectives for air operations. <74>

In light of the previously cited caveat regarding decentralization of air support forces, the effect of this paragraph was to place selection of the objectives those air support forces were to pursue in the hands of corps, division, and regimental commanders whose knowledge of the capabilities and limitations of those forces was, at best, somewhat spotty. The philosophical bent and professional experiences of these ground commanders understandably contributed to a very narrow focus on immediate tactical needs. Lacking adequate knowledge of, or training in, air support capabilities and limitations, and provided what could best be described as rather vague guidance in its use, it is not at all surprising that these ground commanders should view, and attempt to use, their air support in a manner familiar to them. That was as a sort of flying, multi-purpose (i.e.: field and/or antiaircraft) artillery. <75>

In summary, perhaps the most outstanding characteristic of FM 1-5 was its very blandness. Despite its obvious influence throughout the manual, very little of the intense fervor or scientific and economic certainty of the ACTS's strategic bombardment doctrine was truly reflected there. Curiously, the absolutely vital aspects of tactical doctrine, such as the importance of air superiority and centralized control under a technical and tactical expert (i.e. an airman), were either left unsaid or couched in such understated terms they were likely to be overlooked or ignored by airman and soldier alike. <76>

Whether this was as a result of the separatists and the accommodationists within the Air Corps holding each other's influence at bay, or just the heavy hand of the War Department General Staff is difficult to determine. One thing is certain, though. FM 1-5 was the Army Air Corps',

and subsequent to 1941 the AAF's, own basic doctrinal manual from April 1940 through January 1943. In view of the apparently ambivalent feelings toward the counter air mission among airmen and the limitations they had imposed on tactical aviation, as illustrated throughout FM 1-5, it is small wonder that ground commanders should later see little merit in attempting to do much about the German air force besides insisting on defensive air umbrellas over their own troops and sending small formations of unescorted bombers to attack enemy airfields. <77>

CHAPTER 4 NOTES

<1> US Army, FM 1-5, Air Corps Field Manual -- Employment of Aviation of the Army (1940): ii, 1; Robert F. Futrell, Ideas, Concepts, Doctrine: A History of Basic Thinking in the United States Air Force, 1907-1964 (1974): 51.

<2> Mark S. Watson, Chief of Staff: Prewar Plans and Preparations (The US Army in World War II: The War Department) (1950): 279.

<3> Daniel R. Mortensen, A Pattern for Joint Operations: World War II Close Air Support, North Africa (1987): 9-10.

<4> Paul M. Robinett, Armor Command (1958): 1-3; Watson: 279, 282.

<5> Watson: 280; Robinett: 3; Forrest C. Pogue, Education of a General, 1880-1939 (George C. Marshall) (4 vols., 1963-1987) 1: 345.

<6> Watson: 280; Pogue 1: 319-320.

<7> Futrell, Ideas: 51.

<8> Futrell, Ideas: 51.

<9> Edward Jablonski, Terror from the Sky (Airwar) (4 vols., 1971) 1: 24.

<10> FM 1-5 (1940): 9.

<11> FM 1-5 (1940): 1-2.

<12> FM 1-5 (1940): 9.

<13> FM 1-5 (1940): 9.

<14> FM 1-5 (1940): 9.

<15> FM 1-5 (1940): 2.

<16> FM 1-5 (1940): 2.

<17> FM 1-5 (1940): 17.

<18> FM 1-5 (1940): 17.

<19> FM 1-5 (1940): 15-18.

- <20> FM 1-5 (1940): 37.
- <21> FM 1-5 (1940): 40-41.
- <22> FM 1-5 (1940): 41.
- <23> FM 1-5 (1940): 41.
- <24> FM 1-5 (1940): 41.
- <25> John H. Batchelor, et. al., Air Power: A Modern Illustrated Military History (1979): 242; Ezra Bowen, Knights of the Air (The Time-Life Epic of Flight Series (1980): 124-138; B.H. Liddell Hart, The Real War, 1914-1918 (1930): 316-317.
- <26> Batchelor: 236-240; Bowen: 133-138; Cyril Falls, The Great War (1987): 255-256, 365-366.
- <27> Bowen: 137-138; Falls: 255-256; J.F.C. Fuller, A Military History of the Western World (3 vols., 1954-1956) 3: 269-271; Liddell Hart: 298-304.
- <28> FM 1-5 (1940): 9.
- <29> FM 1-5 (1940): 9, 28, 41; Thomas H. Greer, The Development of Air Doctrine in the Army Air Arm, 1917-1941, US Air Force Historical Study No. 89 (1955): 116.
- <30> Greer: 47-52, 57-60, 77-83, 115-120; Robert T. Finney, History of the Air Corps Tactical School, 1920-1940, US Air Force Historical Study No. 100 (1955): 30-34.
- <31> Greer: 55.
- <32> Greer: 61.
- <33> Greer: 7-8, 56, 58-59, 61-62.
- <34> Greer: 61-62.
- <35> Greer: 82.
- <36> FM 1-5 (1940): 2, 15, 30-32.
- <37> Greer: 66-67, 80-83, 118.
- <38> Finney: 37; Greer: 81.
- <39> FM 1-5 (1940): 9; Finney: 37; Greer: 81.
- <40> FM 1-5 (1940): 29.

- <41> FM 1-5 (1940): 36.
- <42> Greer: 81.
- <43> Greer: 81.
- <44> Jablonski, Wings of Fire (Airwar) (4 vols., 1971): 52-53.
- <45> Jablonski: 53.
- <46> John Terraine, A Time for Courage, The Royal Air Force in the European War, 1939-1945 (1985): 11-13.
- <47> Terraine: 9-10.
- <48> Terraine: 88-90.
- <49> Terraine: 87-88.
- <50> Terraine: 141.
- <51> Terraine: 207.
- <52> Jablonski 4: 52-53, 92.
- <53> Albert Speer, Inside the Third Reich (1981): 286-287; Terraine: 82.
- <54> Speer: 286-287; Terraine: 82.
- <55> Speer: 283-287.
- <56> Greer: 60-62, 66-67.
- <57> Greer: 55.
- <58> Greer: 66, 87, 121.
- <59> Greer: 66, 87, 121.
- <60> Greer: 121.
- <61> Kent R. Greenfield, Army Ground Forces and the Air-Ground Battle Team, Including Organic Light Aviation, Army Ground Forces Study No. 35 (1948): 2, 50.
- <62> Greer: 12, 39-40, 66-67, 87-89, 121-123.
- <63> Greer: 91.
- <64> Greer: 60, 85.

<65> Greer: 55, 60, 85, 91.

<66> Wesley F. Craven and James L. Cate, eds., Europe: TORCH to POINTBLANK, August 1942 to December 1943 (The Army Air Forces in World War II) (7 vols., 1948-1958) 2: 704-706; Greer: 117-118.

<67> Greer: 115.

<68> FM 1-5 (1940): 10.

<69> FM 1-5 (1940): 21-23.

<70> FM 1-5 (1940): 22.

<71> John J. Sullivan, "The Botched Air Support of Operation Cobra," Parameters 18 (March 1988): 97-110.

<72> FM 1-5 (1940): 23.

<73> FM 1-5 (1940): 22.

<74> FM 1-5 (1940): 21-22.

<75> Laurence S. Kuter, "Statement by Brigadier General Laurence S. Kuter," Press Conference Held at the Pentagon, 22 May 1943, 614.505, US Air Force Historical Research Center, Maxwell AFB, AL: 3-4.

<76> Greer: 113-114.

<77> Letter, Kuter to Commanding General, US Army Air Forces, 12 May 1943, S-2704, Combined Arms Research Library, Ft. Leavenworth, KS: II.3.(b).

CHAPTER 5

WARTIME AIRPOWER DOCTRINE: 1940-1943

As the war in Europe raged and American involvement approached, airpower doctrine continued to evolve and undergo refinements based on both the increasing influence of airmen within the War Department and the observation by airmen of the ongoing combat between the belligerents. All branches of the US Army observed the conflict with intense professional interest. Airmen found that much of the doctrine they had so firmly believed in during the interwar years was being validated in combat overseas. That portion of the doctrine, however, which had found its principal and staunchest advocates chiefly among American airmen, was yet to receive its acid test. In reporting from London in September 1940, the Air Corps' Special Observer Group was so anxious to validate the strategic bombardment theory that the most valuable lessons to be learned about tactical doctrine were, if not totally overlooked, certainly not accorded the attention to which they were entitled. <1>

Principal among these lessons were the concepts of centralized control by airmen of all air forces, not just those engaged in "strategic" operations, and also the achievement of air superiority through an intensive counter air campaign preceding and, just as importantly, during contact of the ground forces. When the Luftwaffe observed those measures in Poland in September 1939, and again in the Low Countries and France in May through

June 1940, it had been invincible and had enabled the German armed forces as a whole to obtain swift, decisive victories. <2>

When the Luftwaffe neglected the counter air campaign prior to achieving air superiority in favor of terror bombing at Hitler's behest during the Battle of Britain, it granted the RAF the breathing space necessary to regain the initiative. <3> Forfeiting the battle for air superiority ultimately lost the Luftwaffe the air campaign which was the vital first phase of Operation Sealion, the invasion of Great Britain. <4>

According to some highly respected military historians, the Battle of Britain then, although strictly an air battle, ranks as the most decisive action of the entire war. <5> In denying Hitler air superiority over England and the English Channel, the RAF completely scuttled any real hope he may have entertained for successfully mounting a cross-channel invasion in the foreseeable future. <6>

Frustrated in the West by the RAF, Hitler was then forced to turn his attention prematurely eastward in order to ensure: first, Stalin's frantic troop buildup and fortification of Soviet-occupied eastern Poland did not spoil German ambitions to the east, and; second, to preempt any aggressive designs which might be signified by the massive military and industrial mobilization then taking place in the Soviet Union. Condemned to fight the two-front war he had sought to avoid with a swift victory over the western Allies, Hitler, and Germany, were ultimately doomed. <7>

On the other side of the balance sheet, a careful doctrinal analysis reveals that centralized control was crucial to this victory. After having dispersed itself ineffectually in the hands of the British Army during the Battle of France, the RAF's rededication to this principle enabled Britain's

air commanders to effectively mass their carefully harbored air assets at decisive times and places. <8> This in turn enabled them to achieve local air superiority over limited areas for limited periods. Even with the respite Hitler's terror bombing had given them, this method of employment was crucial to the RAF's defeat of a numerically far superior foe during the Battle of Britain. <9>

It was unfortunate that Air Corps leaders chose to concentrate on the technical aspects of the Luftwaffe's doctrinal failure. Preferring to view this defeat and the earlier ones suffered by the RAF and French Air Force in France in terms of those air forces' lack of sufficient long range, heavily armed bombers, the American Air Corps missed a priceless opportunity to strengthen its existing tactical doctrine with unequivocal statements of air war principles and priorities. <10> Equally unfortunate, however, was the presence and influence of other observers in the US Army who, although decidedly less qualified to do so, were no less anxious to comment on the successes or failings of airpower and the reasons for them.

Speaking on what he felt was the lack of adequate cooperation between air and ground forces in the US Army in comparison with the Luftwaffe and the German Army, Chief of AGF Lt. Gen. Lesley J. McNair addressed an audience of American Legionnaires on 3 November 1941:

Without this vital teamwork, the vast power of aviation is futile; with it, the infantry, is shielded and pulled forward against all obstacles. Events in Europe have proved conclusively that aviation itself is indecisive. <11>

Such eminent historians as R. Ernest Dupuy and his colleague Trevor N. Dupuy have reached conclusions diametrically opposed to McNair's. <12>

Interestingly enough, so did the United States Strategic Bombing Survey (USSBS) For readers whose familiarity with the USSBS is at best superficial, or worse, based on the derogatory and erroneous public pronouncements of left-wing economist John Kenneth Galbraith (whose motives for such pronouncements at the height of the Cold War can only be surmised), the USSBS was composed of eminent civilian scientists, lawyers, politicians, and economists. The Survey was convened to produce an impartial study of the military, economic and psychosocial effects of the application of airpower. USSBS members were selected by the President, as Gen. Arnold had recommended, on the basis of their lack of association with the AAF. <13> In September 1945 the USSBS concluded:

Air power was decisive in the war in western Europe. Hindsight inevitably suggests that it might have been employed differently or better in some respects. Nevertheless, it was decisive. <14>

Arguing against the decisiveness of airpower in the same November 1941 speech to the Legionnaires, Gen. McNair laid the blame for poor air-ground cooperation in the fall GHQ maneuvers on the increasing autonomy of the Air Corps. Unabashedly opposed to the concept of an independent air force, he declared:

Our reason has ruled against this false proposition for twenty years, and the war abroad has now produced such a mountain of evidence against it that it should be interred once and for all. <15>

From a ground commander's perspective, as one of the chief proponents of combined arms warfare, his feelings were understandable. However, it is

difficult to imagine just exactly what evidence McNair was referring to. Air-ground teamwork was indeed essential to combined arms operations. The independent Luftwaffe had unequivocally proved this in Poland and France. The independent RAF was also, at that moment, in the process of proving in it the Western Desert. <16> To assert, however, that because aviation seemed to work best and most consistently in conjunction with ground action it was therefore incapable of decisive action independent of the ground arm was a view of reality fully as distorted as that of the advocates of unescorted bombers. Granted, the independent Luftwaffe had not been able to force decisions at Dunkirk and the Battle of Britain as Reichmarshal Hermann Goering had so grandiously promised the Fuehrer. However, the opposing independent RAF had indeed proven decisive in those instances. A very plausible case has been made that in so doing, the RAF, with the unwitting assistance of Adolf Hitler, had preordained the outcome of the entire war with its defeat of the Luftwaffe on those occasions. <17>

Because of the rather incomplete analyses by both air and ground officers of the US Army, the development of American airpower doctrine during this crucial period would suffer. Manuals dealing with airpower which were published subsequent to FM 1-5, but prior to extensive American combat experience being gained, generally offered only slight clarification to those issues on which that manual had failed to give the necessary explicit guidance.

The next Air Corps field manual to be released after FM 1-5 was FM 1-10, Tactics and Technique of Air Attack, published on 20 November 1940. This manual did address air superiority explicitly. However, the only place

it did so was in the section titled "Support of Ground Forces." Even then, the title of the paragraph was "Local Air Superiority".

204. LOCAL AIR SUPERIORITY. --- a. Offensive operations by ground forces will be seriously jeopardized if conducted in the face of effective enemy air opposition. In the face of effective hostile fighter opposition, friendly air attacks against ground objectives will normally result in excessive losses....For the above reasons the mission of first priority of combat aviation in support of ground force units is, whenever possible, the destruction or neutralization of effective hostile air resistance from the decisive area of ground operations for the period of time during which those ground operations are being conducted. Coordination should ensure that the decisive phase of ground force operations is not initiated prior to the execution of effective counter air force missions by directly supporting or other friendly combat aviation. <18>

On the surface this would seem to have been a giant stride in the right direction as far as air superiority and counter air operations were concerned. However, in analyzing this paragraph, several factors must be considered. First, the use of the phrases, "...whenever possible..." and "...coordination should..." softened the intent enough so as to enable the supported ground commander to draw the conclusion that attainment of air superiority, although certainly desirable for security and maximum freedom of maneuver, would not always be possible or perhaps even necessary. <19>

Second, the clause about "...other friendly combat aviation..." attaining air superiority implied that a commander need not necessarily spare his own precious air assets to perform a task of dubious benefit when somebody else's air could do the job. <20> According to Gen. Kuter, this was precisely the case in Northwest Africa in 1942 and early 1943. <21>

Third, by the use of the phrase "...from the decisive area of ground operations for the period of time during which those ground operations are

being conducted...." FM 1-10 placed definite geographic and temporal limits on the concept of air superiority. <22> This was extremely tricky doctrinal terrain the writers were negotiating. It led unfortunately to some innocent and understandable, yet very dangerous, misconceptions.

Apparently many officers in the ground forces (and at least some of the strategic bombing proponents in the air forces as well) came to believe that if local air superiority could be extended indefinitely over time, it would provide a cheap, viable alternative to giving up large parts of the air forces in pursuit of the elusive goal of theater air superiority. This notion was in conflict, however, with the implicit temporal limitations necessarily imposed by a finite amount of air assets. Tactical airmen realized that thinly spreading limited air assets in an attempt to provide local air superiority everywhere would not allow sufficient massing of those assets to assure victory anywhere. The attrition alone resulting from such a scheme would quickly put them out of business. Hence, these airmen valued most highly the necessity of obtaining theater air superiority. <23>

Unfortunately, this was often to the detriment of providing the increased level of security afforded by an umbrella of local air superiority. Ironically, temporary local air superiority was of vital necessity to the effective conduct of the surface operations which could secure advanced airfields. These forward airfields in turn could make the extension of theater air superiority to greater limits possible. <24> Both sides of the argument failed to recognize that it was not possible to have one without providing for the other. At that point in time, however, the views of the ground forces on local air superiority were the ones that prevailed.

The ideas of ground forces and air forces as to just exactly what constituted the local area were radically different. The following example illustrates the divergent viewpoints. On 18 January 1943, the II (US) Corps commander was asked to supply aerial reconnaissance with the support aviation at its disposal for the XIX (French) Corps which was being attacked by a German force of unknown size and disposition. XIX Corps and II Corps were separated by 70 miles of intervening mountainous terrain. Although his support aviation was idle at the time, Maj. Gen. Lloyd R. Fredendall refused the request "...because of lack of immediate interest or of responsibility for operations so far distant...." <25> What seemed like such a remote location from the ground officer's perspective, however, was only a 15-20 minute hop in a Spitfire or P-40 to which the intervening terrain was irrelevant.

If left to the interpretation of non-flyers, as was the case initially in Northwest Africa, this unrealistically limited view of the local area effectively restricted the concept of local air superiority to the area prescribed by unit boundaries. <26> This in conjunction with the following phrase from FM 1-10 led to the umbrella concept:

204. LOCAL AIR SUPERIORITY. ---a. ...Bombardment aviation and such pursuit aviation as is not required for its primary task of protection against hostile air attacks are employed in counter air force operations within their respective radii of action. Pursuit as well as bombardment aviation weapons are effective against aircraft at rest on their bases. <27>

The statement about the effectiveness of employing both classes of support aviation against hostile aircraft "...at rest on their bases..." was sound advice. However, the previous sentence effectively relegated that

advice to the realm of the academic. To wit: In the absence of air superiority, which could not be gained without an aggressive, offensive counter air campaign, bombardment aviation could not effectively attack enemy airdromes without protective escort. Because pursuit aviation was "...required for its primary task of protection against hostile air attacks... [i.e.: defensive patrols in the immediate vicinity of supported ground units]," in the absence of local air superiority, pursuit generally could not be spared for escort duty in a more efficient attempt at gaining local air superiority. <28> The paradox is self-evident.

The irony of the paradox is painfully apparent to an airman. To a soldier, however, accustomed to thinking in classical ground combat terms, at the tactical level, there is no practical disadvantage to being on the defensive. One might argue that the initiative inherent in offensive operations places the defender at a psychological disadvantage. However, given sufficient time to choose the terrain, prepare fighting positions, emplace obstacles, and survey registration points for artillery, in strictly Clausewitzian terms, even when possessed of inferior numerical strength, the defense is most definitely the stronger form of warfare. This is so because the defender can choose the most defensible terrain and then use it to his best advantage as an invaluable force multiplier. <29>

In air warfare, however, terrain is generally irrelevant while mass and/or surprise, at least locally, are everything. When it does have an effect, terrain is likely to favor the attacker. The defender in air warfare, because of the speed, range, and flexibility of the attacking aircraft, quite often sacrifices such air combat imperatives as initiative, mass, and surprise in all but one versus one engagements. Given these constraints,

and even a large numerical advantage, the best the defender can hope to achieve is air parity, and then only if he is not consistently outnumbered in local battles. Under conditions of numerical inferiority where the enemy's initiative remains uncontested, attainment of air superiority becomes problematic. <30>

This is by no means meant to imply that the air superiority mission precluded the close air support mission. On the contrary, this classic form of air support was subordinated only to the "destruction or neutralization of enemy aviation forces opposing the supported ground forces" and "reconnaissance, liaison, and observation." These missions were what ground forces commanders themselves felt were of paramount value in any event. <31>

However, the dilemma effectively posed by the paradox pointed out above kept both classes of support aviation tied to the whims of the supported elements. As Gen. Kuter explained:

Each ground commander naturally and properly viewed the ground (and air) on his immediate front as of paramount importance and insisted that his air support forces be employed almost exclusively on his front. Each commander agreed that superiority in the air was necessary, but that the air war which could gain that superiority should be fought by someone else's air force....From the viewpoint of the ground commander, the condition was habitually too precarious on his immediate front to permit the diversion of the air units allocated to support his ground forces from their direct support tasks to distant air force missions. <32>

Perhaps the most ominous and ultimately disasterous provision of FM 1-10, however, was that, unlike FM 1-5, there appeared no proscription against employing support aviation against "unprofitable" targets which

would result in severe losses for small gain. In fact, the bottom line of paragraph 204 read as follows:

204. LOCAL AIR SUPERIORITY. ...---c. While the most effective results from supporting aviation are obtained through the neutralization of effective hostile air resistance in the area of operations, the lack of assured local control of the air does not prevent the use of aviation in direct support of ground forces where the operation is critical and the end to be accomplished warrants the acceptance of the risk of heavy losses in the friendly aviation forces. <33>

That local ground commanders routinely saw their situations as so critical that this advice was heeded with a sanguinary pragmatism in the opening months of the Tunisian campaign is made devastatingly clear by the testimony of participants and witnesses. The 14th Fighter Group was utterly destroyed in slightly more than two months of combat, withdrawing from Tunisia to Morocco on 28 January 1943 with but six operational aircraft remaining out of the 50 originally deployed. Personnel losses resulted in only 26 of the original 50+ pilots surviving this period of combat. This group was hurt so badly, it would not be able to reenter combat until the very end of the Tunisian campaign the following May. <34>

The 33rd Fighter Group, much of which did not enter combat until late December 1942 and early January 1943, also had to be withdrawn for about a month following the Kasserine fight in order to reorganize and reequip. <35> In his report to Gen. Arnold comparing air force organization and operations before and after the consolidation of Allied air forces in late February 1943 Kuter cited the following example:

The Bisley light bomber was an obsolete airplane. It was slow and practically defenseless and suitable for use as a night intruder only. In that role, however, it was very effective because of the experience, skill and leadership in the Bisley Wing. An army commander ordered a daytime attack by a Bisley squadron on [an] objective defended by German fighters. The Bisley Wing Commander protested because of the unsuitability of his aircraft and the disproportionate hazard involved. The army commander insisted that the mission be performed. An especially able squadron was selected and dispatched. Every Bisley was shot down. <36>

The above situation prevailed as long as the airmen's technical expertise and tactical concerns were subordinated to the influence of ground commanders. As long as subordinate ground commanders retained exclusive control over the selection of the targets to be hit, their ultimate control over the supporting aviation force was secure. <37>

Some readers may be inclined to lay the blame for the Bisley incident at the doorstep of the the AAF for having failed to develop suitable aircraft for this critical mission. That, however, is not the case in point here. Kuter was equally as critical of the misuse of British airpower as he was American. The Bisley, obsolete even by the standard of the time, was a light bomber flown by the RAF. Poorly armed and inadequately armored, it was neither designed, nor, because of its recognized unsuitability for the role, recommended by airmen for unescorted daylight penetration missions. <38>

The matter at issue here was the imperious refusal of ground commanders in Tunisia, both British and American, to pay heed to the operational advice and legitimate tactical concerns of their air officers in selecting the objectives for the air forces under their control. By ignoring the protests of their airmen and sending obsolete light bombers against

counter air targets while decreeing that pursuit type aircraft should remain devoted exclusively to defensive patrols over Allied ground elements, ground commanders effectively controlled not only the objectives of the supporting air forces, but their tactics as well. In this case, tragically so.

The doctrine at all levels repeatedly emphasized the principle that ground commanders should have exclusive control over the objectives of supporting aviation. Examples of this are to be found in all the relevant publications of this period which dealt with aviation in support of ground operations:

80. GHQ may direct all or part of its combat aviation to support the ground units as a whole or to support particular ground units. In either case, the aviation operates to further the mission of the supported unit and receives its missions and objectives from the commander of the forces which it is supporting....

694. Supporting combat aviation...is employed on missions which further the attainment of the objective of the supported forces. It is not used on missions divergent from this purpose. <39>

31. The most important target at a particular time will usually be that target which constitutes the most serious threat to the operations of the supported ground force. The final decision as to priority of targets rests with the commander of the supported unit. <40>

63. Operations of pursuit aviation in support of ground forces are based upon the needs of the ground forces and their supporting aviation. <41>

233. All classes of aviation may be used to support ground forces....

234. ...This support may consist of...pursuit protection in the immediate area of ground operations of the supported troops and installations.

235. ...Bombardment supports the operation of ground forces by supplementing or extending the range and hitting power

of organic means of the supported ground force. Bombardment aviation placed in support of the ground unit operates to further the mission of the supported force. <42>

Although it is nonsensical to suggest that the supported force should have no control over the objectives of the supporting force, the notion that those objectives should be determined exclusively by subordinate elements of the supported force with limited knowledge of, or interest in, the grand scheme of affairs flies in the face of all logic. To put it in terms roughly analogous to similar support relationships within the ground combat branches, it would be as though a battery or two of the corps artillery were placed in direct support of an infantry company. In addition to this already extraordinary departure from the doctrine governing the normal relationship between corps artillery and line infantry companies, the infantry company commander would then be granted the authority to prohibit "his" batteries from conducting counterbattery fires. Because his primary concern is his company, logically his interest in forfeiting any of his close support fires to conduct counterbattery fires is minimal unless the shells of the enemy artillery are actually falling on his position. Even then, to carry the analogy as far as the supporting/supported relationship between air and ground in Tunisia did, the company commander would be granted the authority to dictate to his supporting battery commanders how many tubes and what types of fuzes would be used...if and when he permitted them to fire counterbattery missions. <43>

When one considers that the primary threat to Allied forces in Tunisia was posed initially by the Luftwaffe, which suffered no such artificially imposed geographical limitations as division and corps boundaries, it is

difficult to comprehend the reasoning which perpetuated the arrangement. Imposing these sorts of boundaries on the supporting air forces when the opposing air forces failed to recognize or honor similar boundaries ensured that the battle for air superiority was markedly one sided. Gen. Eisenhower confirmed that this was indeed the case initially in Northwest Africa. <44>

Although American ground forces, by and large, felt that having neither theater nor local air superiority might be costly and bothersome, it did not constitute an insurmountable obstacle to mission accomplishment. As such, and especially in light of the close cooperation they observed between the Luftwaffe and the German Army, many American soldiers believed that air missions conducted beyond the sphere of ground force influence were not supportive of their efforts at all. <45> In an 8 December 1942 letter to Gen. Marshall, 13th Armored Regiment commander, Brig. Gen. Paul M. Robinett, wrote:

My regiment has fought well, has had rather severe losses, but can go on. I have talked with all ranks possible and am sure that men cannot stand the mental and physical strain of constant aerial bombings without feeling that all possible is being done to beat back the enemy air effort. News of bombed cities or ships or ports is not the answer they expect. They know what they see and at present there is little of our air to be seen. <46>

Evidence of the impact this sentiment had on the prosecution of a truly effective counter air campaign while ground commanders controlled air support objectives can be found in the types of missions flown prior to the reorganization on 18 February 1943. AAF Tunisian campaign veterans who responded to a survey conducted for this study overwhelmingly indicated that the majority of their operations had been in direct or indirect support

of ground forces. These missions were in the form of air-ground attack against German ground forces, defensive patrols over Allied ground forces, or, in the case of some fighter groups, escort of bombers engaged in either direct support or interdiction, the bombing of "...cities, ships, or ports."

<47> Since the heavy and medium bombers these fighters escorted were certainly not bombing these interdiction targets in Northwest Africa as part of what ACTS theorists would have regarded as a "strategic air offensive," in a much more immediate sense than heavy bombers hitting classically "strategic" targets within the Reich, all the Allied airpower in the Northwest African theater was employed in some sort of supporting role.

The problem of "out of sight" being equated with the supported ground forces being "out of mind" was certainly not unique to the AAF, or even the Allied air forces in Tunisia. Even in the Western Desert, the RAF had occasionally been at pains to get the British Army to recognize that it could accomplish anything useful unless it was plainly visible buzzing constantly about overhead. In April of 1941, Air Marshal Arthur W. Tedder, then Air Officer Commanding in Chief (AOC-in-C) of the Desert Air Force, had to admonish one of his Group Captains to take the necessary time out from continuous combat to submit some operations summaries.

If people do not hear what is being done they are apt to think that nothing is being done, and deduce that the squadrons are out of action. Since nothing can be farther from the truth I would urge you to try and let us have operational summaries as promptly as possible. In any case your chaps have been putting up a grand show, and it is only right that the world should know.

<48>

Checking this reference against what the enemy was saying at the time and later, as the air situation improved for the RAF in the Western Desert, gives some glimmering of the increasing effectiveness of tactical as well as strategic air interdiction. From early April 1941 on, Gen. Erwin Rommel's diary mentions harassment, disruption, delay, and destruction of his armored columns and, more significantly, his supply trains and air support in the desert. By 22 December 1941 the situation appears to have brought the Afrika Korps chief to the brink of despair:

Retreat to Algedabia! You can't imagine what it's like. Hoping to get the bulk of my force through and make a stand somewhere. Little ammunition and petrol, no air support. Quite the reverse with the enemy. But enough of that.... <49>

Although most ground commanders at the time did not instinctively see indirect support missions such as air interdiction or naval convoy escort as having much, if any, bearing on their operations, it requires no extraordinary vision to imagine what an unimpeded flow of men and materiel would have meant to Axis forces in North Africa. Unfortunately, until supplies have become critically short, logistic considerations have rarely enjoyed an extremely high priority on the US Army's "list of important things to worry about." The planning and execution of the initial operations in the Northwest African campaign were certainly no exception. <50>

Of the four manuals quoted above, the first three essentially reiterated the views of previously cited manuals regarding air superiority and the counter air mission. FM 100-5 was most notable for this. However, there were some differences.

FM 1-15 delved far deeper into the tactics of pursuit employment than had previous efforts. It also took a remarkable yet rather timid step toward liberating pursuit aviation from its extended subjugation to purely defensive roles. The manual contained one fleeting reference to "...permanent air superiority..." obtained by "...offensive action..." with "...pursuit concentrations and/or offensively fighting patrols." Ironically, this occurred in the section titled "Support of Ground Forces." <51> It appears, however, to have been something of an aberration though, since throughout the rest of the manual the defensive, and therefore "...indecisive...", nature of pursuit was continually stressed. <52>

FM 31-35 also helped keep the waters muddy regarding counter air, local versus theater air superiority, and decentralized control of supporting air forces by local supported ground force commanders. This last was accomplished through the proviso of the actual attachment (and all that term implies doctrinally) of aviation units to subordinate ground units. Moreover, although having first paid notice to the supporting air commander's authority, FM 31-35 then circumvented it by granting the supported commander final authority over target selection. <53>

However, in spite of the flaws it contained which hindered the air war, FM 31-35 did have a number of well conceived air-ground features that were subsequently refined and validated in combat on the European continent. Chief among these was its definitive guidance on air-ground liaison teams, the air request net, and air support mission procedures. <54> A subsequent chapter will address this manual in more detail.

The last of these manuals, FM 100-15, although containing, as noted above, some flaws, was something totally new and extraordinary as far as

its treatment of airpower was concerned. The following chapter will explore this unique manual in an attempt to explain why, in spite of its thoughtful analysis of modern warfare, it, too, was ultimately to prove inadequate in combat.

CHAPTER 5 NOTES

<1> Thomas H. Greer, The Development of Air Doctrine in the Army Air Arm, 1917-1941, US Air Force Historical Study No. 89 (1955): 108-110.

<2> Greer: 109.

<3> Edward Jablonski, Terror from the Sky (Airwar) (4 vols., 1971) 1: 121-122, 127-128, 130-131, 136.

<4> Jablonski 1: 82-85.

<5> R. Ernest Dupuy and Trevor N. Dupuy, The Encyclopedia of Military History from 3500 B.C. to the Present (Second Revised Edition) (1986): 1016.

<6> Jablonski 1: 136.

<7> Peter Young, ed., Illustrated World War II Encyclopedia (24 vols., 1966) 3: 412.

<8> Richard J. Overy, The Air War, 1939-1945 (1981): 11, 15.

<9> Jablonski 1: 121-136.

<10> Greer: 109-110.

<11> Kent R. Greenfield, Army Ground Forces and the Air-Ground Battle Team, Including Organic Light Aviation, Army Ground Forces Study No. 35 (1948): 8.

<12> Dupuy and Dupuy: 1016.

<13> Wesley F. Craven and James L. Cate, eds., Europe: ARGUMENT to V-E DAY, January 1944 to May 1945 (The Army Air Forces in World War II) (7 vols., 1948-1958) 3: 789-792; Robert F. Futrell, Ideas, Concepts, Doctrine: A History of Basic Thinking in the United States Air Force, 1907-1964 (1974): 73; Kent R. Greenfield, American Strategy in World War II: A Reconsideration (1963): 86-87, 114, 117-118; Haywood S. Hansell, Jr., The Strategic Air War against Germany and Japan (1986): 116, 126; Diane T. Putney, ed., ULTRA and the Army Air Forces in World War II (1987): 58-59.

<14> The United States Strategic Bombing Survey, Over-all Report, (European War) (1945): 107.

<15> Greenfield, Air-Ground Battle Team: 8.

- <16> William G. F. Jackson, The Battle for North Africa (1975): 168-189.
- <17> Jablonski 1: 73, 136; Dupuy and Dupuy: 1016.
- <18> US Army, FM 1-10, Air Corps Field Manual -- Tactics and Techniques of Air Attack (1940): 115.
- <19> FM 1-10 (1940): 115.
- <20> FM 1-10 (1940): 115.
- <21> Letter, Kuter to Commanding General, US Army Air Forces, 12 May 1943, 614.201-1, US Air Force Historical Research Center, Maxwell AFB, AL: II.1.b. (Cited hereafter as USAFHRC.)
- <22> FM 1-10 (1940): 115.
- <23> Greenfield, Air-Ground Battle Team: 48-49.
- <24> Greenfield, Air-Ground Battle Team: 48-49.
- <25> George F. Howe, Northwest Africa: Seizing the Initiative in the West (US Army in World War II: Mediterranean Theater) (1957): 376-377; Kuter to CG, AAF, 12 May 43, USAFHRC: II.1.b.(5).
- <26> Kuter to CG, AAF, 12 May 43, USAFHRC: II.1.b., II.1.b.(1)., II.1.c.(1).
- <27> FM 1-10 (1940): 115-116.
- <28> FM 1-10 (1940): 115-116.
- <29> Carl von Clausewitz, On War (Indexed Edition, edited and translated by Michael Howard and Peter Paret) (1984): 357-362.
- <30> US Air Force, AFM 1-1, Basic Aerospace Doctrine of the United States Air Force (1984): 2-1 - 2-21.
- <31> FM 1-10 (1940): 115; Greenfield, Reconsideration: 104.
- <32> Kuter to CG, AAF, 12 May 43, USAFHRC: II.1.b.
- <33> FM 1-10 (1940): 115-116.
- <34> Interview, Sherrill D. Huff, 4 March 1988, Tape in Author's Personal Files, Ft. Leavenworth, KS. (Cited hereafter as APF.) A retired USAF Maj., Huff was an enlisted ground crewman with the 14th Fighter Group (Ftr Gp) during 1941-1945.; Letter, Huff to Author, Undated, Received 9 March 1988, APF, Ft. Leavenworth, KS; Jeffery L. Ethell, "Lightning

Pilot," American Aviation Historical Society Journal 17 (Spring 1972): 11-17.

<35> Letter, Charles H. Duncan to author, 17 March 1988, APF, Ft. Leavenworth, KS. (A retired USAF Col., Duncan was operations officer of the 58th and 60th Fighter Squadrons (Ftr Sq) prior to commanding the 59th Ftr Sq, 33d Ftr Gp during 1942-1943.)

<36> Kuter to CG, AAF, 12 May 43, USAFHRC: II.1.b.(4).

<37> Kuter to CG, AAF, 12 May 43, USAFHRC: II.1.b., II.1.b.(1)-(5), II.3.(b).

<38> Kuter to CG, AAF, 12 May 43, USAFHRC: II.1.b.(4)

<39> US Army, FM 100-5, Field Service Regulations -- Operations (1941): 14, 163.

<40> US Army, FM 31-35, Basic Field Manual -- Aviation in Support of Ground Forces (1942): 11.

<41> US Army Air Forces, FM 1-15, Army Air Forces Field Manual -- Tactics and Techniques of Air Fighting (1942): 38.

<42> US Army, FM 100-15, Field Service Regulations -- Larger Units (1942): 81.

<43> Orvil A. Anderson, "Close Air Support for Surface Forces," Airpower Historian 11 (January 1964): 32; Trevor N. DuPuy, "Unity of Command?" Air Force Magazine 38 (November 1955): 46-49; W.R. Wolfenbarger, "Basic Concepts of Tactical Air Power," Aviation Age 4 (October 1951): 28-29.

<44> Dwight D. Eisenhower, Crusade in Europe (1948): 116-120; Williamson Murray, Strategy for Defeat: The Luftwaffe, 1933-1945 (1983): 160.

<45> Interview, Henry E. Gardiner, 24 March 1988, APF, Ft. Leavenworth, KS. (Mr. Gardiner commanded the 2d Battalion, 13th Armored Regiment (2/13 AR), 1st Armored Division (AD) during 1942-1945.); Paul M. Robinett, Armor Command (1958): 82-84.

<46> Greenfield, Air-Ground Battle Team: 19.

<47> Interview, Huff, APF; Huff to Author, undated, APF; Duncan to Author, 17 Mar 88; Letter, Richard E. Holcomb to Author, 19 March 1988, APF, Ft. Leavenworth, KS. (A retired USAF Lt. Col., Holcombe served as a flight leader, operations officer, and acting commander, 59th Ftr Sq, 33d Ftr Gp during 1942-1943.); Letter, Alex M. Adair to Author, 7 March 1988, APF, Ft. Leavenworth, KS. (Mr. Adair was adjutant for the 81st Bombardment Squadron (Medium) (Bm Sq (M)), 12th Bombardment Group (Medium) (Bm Gp

(M) during 1942-1943.); Interview, John L. Bradley, 27 March 1988, APF, Ft. Leavenworth, KS. (A retired USAF Lt. Col., Bradley was a flight leader and ace with the 59th Ftr Sq, 33d Ftr Gp during 1942-1943); Letter, Richard R. Coulter to Author, 10 March 1988, APF, Ft. Leavenworth, KS. (A retired USAF Col., Coulter served as a wingman, flight leader, and operations officer, 60th Ftr Sq, 33d Ftr Gp during 1942-1943.); Letter, Berry J. Duncan, Jr. to Author, 5 March 1988, APF, Ft. Leavenworth, KS. (A retired USAF Maj., Duncan served as a pilot and flight commander, 59th Ftr Sq, 33d Ftr Gp during 1942-1943.); Robert D. Knapp, "A Founder Member's Perspective on Airpower," Address Delivered to The Ben Eielson Chapter of Daedalians, 11 December 1986, Eielson AFB, AK. (A retired USAF Brig. Gen., Knapp was commissioned as an Army aviator in World War I. In World War II he commanded the 321st Bm Gp (M), the 57th Bombardment Wing (Bm Wg) (M) and XII BC during 1942-1944.); Knapp to Author, 19 August 1988, APF, Ft. Leavenworth, KS; Curtis R. Low to Author, 14 March 1988, APF, Ft. Leavenworth, KS. (A retired USAF Maj. Gen., Low commanded the 81st Bm Sq (M) and the 12th Bm Gp (M), during 1942-1944.); William W. Momyer to Author, 29 March 1988, APF, Ft. Leavenworth, KS. (A retired USAF Gen., Momyer is the author of Air Power in Three Wars. During 1940-1941 he served as an observer with the RAF's Western Air Force in Egypt and Libya. He subsequently commanded the 33d Ftr Gp in Northwest Africa, Sicily and Italy during 1942-1944.); Interview, Robert Piper, 22 February 1988, APF, Ft. Leavenworth, KS. (Mr. Piper was a medical corpsman with the 81st Bm Sq, 12th BG (M), during 1942-1945.); R.M. Terry to Author, 11 March 1988, APF, Ft. Leavenworth, KS. (A retired USAF Col., Terry was a Spitfire pilot and flight leader in the 308th Ftr Sq, 31st Ftr Gp during 1942-1943.); Tom A. Thomas to Author, 9 April 1988, APF, Ft. Leavenworth, KS. (A retired USAF Lt. Col., Thomas served as a P-40 pilot with the 33d Ftr Gp and as an A-36 pilot and flight leader with the 27th Fighter-Bomber Group during 1942-1944.)

<48> Arthur W. Tedder, With Prejudice (1966): 69.

<49> Erwin Rommel, B.H. Liddell Hart et al, eds., The Rommel Papers (1988): 175.

<50> James A. Huston, The Sinews of War: Army Logistics, 1775-1953 (Army Historical Series) (1966): ix, 518-519.

<51> FM 1-15 (1940): 39.

<52> FM 1-15 (1940): 1, 2, 37, 38, 39, 40.

<53> FM 31-35 (1942): 3, 5, 10-11.

<54> FM 31-35 (1942): 2-5, 11, 12-14.

CHAPTER 6

FM 100-15: SOUND DOCTRINE FOR AIR-GROUND CAMPAIGNS

Of the manuals governing the US Army's employment of airpower which were written and published between 1939 and early 1943, FM 100-15 was unquestionably the most cogent and farsighted. Published 29 June 1942 and titled Field Service Regulations, Larger Units, FM 100-15 was intended to be a "guide for commanders and staffs of air forces, corps, armies, or a group of armies." <1> Its greatest utility could be found as a statement of basic air-ground principles and as a planning aid for theater planners and commanders-in-chief. As such, it contained a number of thoughtful provisions. Some of these had been hinted at in previous manuals, but not strongly enough worded to ensure compliance. Other fundamental points were profoundly original and reflected a solid grasp of the more salient features of modern mobile warfare.

For example, for the first time in US Army doctrine it was recognized that in modern warfare airdromes, as well as more traditional topographic and cultural features, such as defensible ground and cities, could constitute key terrain. In the "Information" section of chapter two, "Planning a Campaign," FM 100-15 specifically directed the attention of the higher commander and his planners to the special significance of:

21. ...the military geography, topography, and climatic conditions, with particular attention to the study of roads and rail nets, airdromes and landing fields, and harbor facilities. <2>

Had this paragraph alone been seriously heeded and solutions developed before the advance into Tunisia, at least some of the ill feelings which arose from the failures of air support during the campaign may well have been prevented. The obvious problems caused by a lack of suitable all-weather airdromes in the drive on Tunis, were responsible for many of the difficulties which led to those failures. <3>

In addition to requiring consideration of geography and climate as it applied to airpower, FM 100-15 suggested that planning and support between the partners in the air-ground battle team not only could, but should be a mutual and reciprocal process. Guidance on the selection of campaign objectives in chapter two specifically pointed out the "...range and flexibility of air forces..." and directed the joint force commander to "...give this careful consideration..." when selecting objectives for them. <4> The section further stated:

34. Whatever the objective selected for the initial operations, the decisions and plans of the commander must be positive and clear-cut, and they must visualize the attainment of the final objective. Unless the commander already possesses sufficient air superiority to permit other operations, the initial objective must include the attainment of air superiority. This may also require operations to acquire bases from which effective air operations can be conducted.

In planning initial operations to attain air superiority, higher commanders are responsible for causing all suitable means under their control to be employed to this end wherever armed forces may operate. <5>

Chapter seven, "Air Forces," contained specific guidance to higher commanders and air force commanders for the employment of air forces supporting ground forces:

208. The basic tasks of the air forces...are as follows:

- a. Deny the establishment of and destroy existing hostile bases from which an enemy can conduct operations on land, sea, or in the air.
- b. Oppose the operations of hostile air forces by fighting in the air.
- c. Operate against hostile land or sea forces, the location of which are such to threaten the vital interests of the United States.
- d. To wage offensive air warfare against the sources of strength, military and economic, of the enemies of the United States in the furtherance of approved war policies.
- e. Operate in close cooperation with the other arms of the mobile army in the conduct of land operations.... <6>

Significantly, subparagraph d. acknowledged, for the first time in officially sanctioned doctrine, the legitimacy of an independent strategic offensive role for airpower. It is interesting to note the fifth place priority (below strategic bombardment) accorded the close support mission in this document. Unlike FM 100-20, FM 100-15 was coordinated with the AGF and approved by the War Department General Staff over a year prior to the AAF's "Declaration of Independence." In contrast, FM 100-20 assigned a third place priority to close support which was only subordinate to the air superiority and battlefield isolation roles. However, it was recognized in FM 100-15 that:

209. All combat aviation in a theater of operations or similar command ordinarily is organized as an air force under the theater or similar commander. This organization permits mass employment as well as maximum flexibility in both close support and independent missions. <7>

Moreover, other paragraphs from the "General" information and the "Employment of Aviation in Close Support of Ground Troops" sections of chapter seven left no doubt that the flexibility obtained by this centralized control meant that all classes of aviation would be used in the close support role when and where the situation warranted. Also, the close support role was redefined.

214. Although the organization, equipment, and training of striking-force [strategic bombardment] aviation must be designed primarily for the application of air power in initial long-range strategic air combat operations, there must also be incorporated the greatest practicable provision for success in close-support operations....<8>

233. All classes of aviation may be used to support ground forces. Light bombardment is particularly trained and equipped to operate in close support of ground forces....<9>

234. Close support comprises all types of operations by aviation which have the primary mission of intervening against hostile ground forces in contact with the supported friendly ground forces or capable of interfering with their mission....<10>

Paragraph 236. went on to furnish details regarding the types of targets which were most effectively assigned to the various types of support aviation. As with previous manuals, FM 100-15 also spelled out warnings against expending the efforts of support aviation against "...targets which could be more economically overcome by the ground forces themselves." <11>. Unlike previous manuals, other subparagraphs within this same section furnished information about the capabilities and limitations of various types of support aircraft and specifically advised:

236.... i. In order to utilize fully and efficiently the capabilities of supporting combat aviation, the field of operation

for air attack should not be restricted, but should be kept sufficiently extended to permit timely attacks on any mobile forces that threaten the successful operations of the supported force. The targets selected must be those that will contribute most to assist the operations of the supported ground force. <12>

Unfortunately, another subparagraph within this section made a statement which may well have been at least partially responsible for the errors made in Northwest Africa regarding forward airfields:

236.... c. The locations of air support units in relation to supported units are immaterial so long as they are within effective radius of action. The closer supporting aircraft is based, however, the faster and more effective will be the support given. <13>

Despite the caveat contained in the second sentence of this paragraph, inclusion of the word "immaterial" in the first sentence of the subparagraph was unnecessarily boastful and ill-advised on the part of the airman who wrote this chapter. This overstatement very likely contributed to the ground commanders' tendency to disregard or at least underestimate the strategic importance of forward landing grounds in Tunisia. In view of the other enlightened and realistic warnings included in this section on a variety of factors which could impinge on the effectiveness and responsiveness of air support, it is surprising that this one slipped in. <14>

However, the most strikingly important, and certainly the most insistent theme throughout FM 100-15, was the recognition and wholehearted acceptance of the absolutely vital necessity of obtaining air superiority. For the first time ever, guidance was laid out on how to go

about achieving this. Guidance was directed at air forces, including those which were engaged in the support of ground forces:

216. Complete control of the air is gained and maintained only by total destruction of the enemy's aviation. Since this is seldom practicable, counter air force operations must be carried on progressively and intensively to provide security from hostile air operations....

217. Once air warfare has begun, the most effective defense is an active and systematic air offensive against enemy aircraft, equipment, bases, and manufacturing facilities.... <15>

Here, also for the first time, was official doctrinal recognition that air superiority was a "joint" responsibility. Not only were air forces responsible for its attainment and maintenance, there was also guidance for theater, ground component, and service force commanders regarding the tasks they were expected to perform in support of the air forces:

215. ...Superiority of operating range over the enemy...may frequently require the seizure or occupation of suitable bases and the construction and operation of necessary facilities.

216. [continued from above] ...Air superiority is at all times a matter of vital concern to the higher commander. The organization of air components is not alone a responsibility of the air forces. The active direction of the higher command and staff is necessary to secure the essential support of service and ground troops, the provision of tonnage and transportation, and the development of temporary and dummy fields. Destruction of hostile aircraft and air bases by air, naval, mechanized, guerilla or parachute forces, should be carried out wherever practicable and usually will be an essential preliminary to larger operations.

The security of his own aircraft is of equal importance to the higher commander with the destruction of enemy aircraft. In distributing ground forces, particularly anti-aircraft units, primary consideration must be given to the protection of friendly aircraft. <16>

241. The defense of an airbase is an integral part of the defense of the entire area in which the base is located. It requires local ground defense forces, plus adequate mobile reserves. <17>

As can be seen in the wording of much of the above, FM 100-15 contained the most numerous and strongly worded statements regarding air superiority and the counter air mission to appear in officially sanctioned doctrine up through that time. In addition to those paragraphs cited above, the authors flatly stated that air superiority was a fundamental prerequisite for successful surface operations. In pursuit of that goal, the absolute necessity of conducting intensive and sustained counter air operations preceding and during air-land campaigns was a theme repeatedly stressed throughout the manual. The few selected examples which follow plainly demonstrate the emphasis that was placed on the subject.

From FM 100-15's chapter three, "Strategic Concentration," there comes the following realistic appraisal of the extreme vulnerability of concentrated land forces to hostile air action beyond the sphere of action of the hostile surface forces:

44.... b. Concentration areas must be made reasonably secure from air attacks by the defeat or limitation of the hostile air force. Depending on the strength with which it is made, hostile air attack is capable of seriously delaying the concentration and of definitely limiting subsequent maneuver. The establishment of air superiority by our own force should precede or, at the latest, be concurrent with the initial phases of the concentration. [Emphasis contained in original.] <18>

Implicit in that paragraph is a sober appreciation for the benefits to be derived from the attainment of air superiority in terms of the ability to achieve the concentration of mass necessary for meaningful maneuver at the operational and strategic levels of war. The Germans had ably demonstrated this from 1939 through 1941. <19> In consideration of how airpower applied to these principles, mass and maneuver, at the higher

levels of war however, Lt. Gen. Dwight D. Eisenhower, Allied Force Commander in Northwest Africa, might have been far better served initially by recalling the example provided by the Western Allies in France 1940.

Fatal disadvantages had accrued to the French and British during the Battle of France because of their inability to mass and maneuver their forces quickly enough to overcome the local superiority achieved by the Germans' armored thrusts through the Ardennes and across the Meuse at Sedan. This occurred primarily as a result of their failure to regain air superiority during the Battle of France. The Allies' loss of air superiority at the very beginning of that campaign prevented them from concentrating their numerically superior forces to overcome the local advantages achieved by the German Army. <20>

Chapter four of FM 100-15 flowed smoothly from "Strategic Concentration" and was logically titled "Advance from Concentration." In addition to the sort of general planning and employment guidance which a senior land commander might expect in this offensively oriented chapter, the field manual reemphasized the importance of air considerations to the land campaign. The first section of this chapter dealt with "Factors Affecting the Plan of Advance." An initial paragraph directed commanders to visualize "operations as a whole from the initiation of the concentration to the accomplishment of the mission." <21> The next paragraph went on to caution:

49. It is fundamental for the commander to evaluate his mission, objective, and available means. In addition he must carefully evaluate all other factors which will affect the advance, either favorably or adversely. Some of these are---[Emphasis contained in original.]

- a. Location of main hostile forces and where and how it is desired to meet them, or where contact with main hostile forces may be expected.
- b. Capabilities of the enemy to interfere with the advance.
- c. Lines of communication (railroads, roads, waterways, air).
- d. Topography of area to be traversed.
- e. Probable weather conditions.
- f. Hostile fortified areas.
- g. Organization of task forces and employment of air forces and armored forces.
- h. Employment of detachments for special missions.
- i. Time and space.
- j. Means for attaining and maintaining air superiority.
- k. Measures for reconnaissance, counterreconnaissance, and all around protection. <22>

The above paragraphs, aimed at commanders from corps through army group to theater level, were clearly intended to serve as reminders to consider all factors which might affect their operations. In no way did they relieve a commander of the responsibility to consider the impact of dissimilar (i.e. air or naval) hostile forces. In fact, given the repeated and unequivocally worded admonishments all throughout the manual not to overlook air superiority considerations in operational and strategic level planning, it should not even have been necessary to include subparagraph j. above.

The next section of chapter four was subtitled, "The Advance." The two paragraphs shown immediately below are from that section. They dealt with the employment of air forces in the advance and stressed to senior commanders, once again, the paramount importance of employing their air forces aggressively in a counter air role to ensure operational and strategic freedom in the phase of advance.

69. Higher commanders must employ combat aviation during the advance to neutralize the hostile air force by counter air force operations unless the air situation is such that the advance is reasonably secure from hostile air attack....

70. Aggressive employment of the air forces, in strict accordance with the general plan of campaign which seeks to gain and maintain air superiority and prevent effective hostile air reaction to the advance and maneuver of the ground forces, may prove of decisive importance in the successful conclusion of the campaign. <23>

The use of the words "aggressive" and "decisive" in conjunction with "counter air operations" in the preceding paragraphs are extremely significant. In their choice lay implicit recognition that even so-called support aviation could, and in fact should, on occasion be used independently from the supported ground forces to "attain and maintain" a condition, air superiority, vitally necessary to the success of those forces.

Despite these doctrinal precepts, American commanders, not only ground commanders, but also, and ultimately more detrimental to successful operations, senior air commanders as well, were embarrassingly unimaginative in their use of pursuit forces. <24> To be sure, the blame for this may well have lain with the earlier, branch-specific (Air Corps and/or AAF) manuals which had not been rescinded or superceded by FM 100-15. It must be recalled that Larger Units was combined arms doctrine for theater or joint task force commanders, their staffs, and senior subordinate commanders, to include air force commanders.

However, FM 100-15 was not entirely free of the ambiguities, preconceptions, and prejudices of earlier doctrine. For example, in chapter seven the section titled "Air Operations in Air Defense" still showed the heavy influence of the strategic bomber theorists:

223. ...A powerful air offensive cannot be prevented by local defenses. A determined air attack once launched may be interfered with but it can rarely if ever be stopped by local defense. <25>

The initial experience in Northwest Africa would seem to indicate that the traditional shackling of pursuit forces to essentially defensive roles had largely blinded senior air commanders to the inherent flexibility of fighter aircraft. This was in spite of the fact that these same fighters, when delivered to Allies as lend-lease materiel, had been equipped with hardpoints on the wings for carrying bombs. In fact, both RAF and AAF fighter units in the Western Desert had used various models of the Curtis P-40 Warhawk (British versions were called the Tomahawk and Kittyhawk) as a fighter-bomber with telling effect against both the Afrika Korps and the Luftwaffe. <26>

In chapter five, "Strategic Maneuvers," FM 100-15 again repeatedly stressed the importance of air superiority. In this context air superiority was crucial for ensuring freedom of maneuver both offensively and defensively for friendly forces, and equally as important for denying or restricting enemy mobility. Also considered vital was the ability to deny aerial reconnaissance to the enemy, a fundamental precondition for achieving surprise. The following excerpts from the "Offensive Maneuver" section of chapter five illustrate these thoughts:

78. ...For decisive results in modern warfare it is essential that the offensive forces have air superiority in the areas of decisive operations. Combat aviation and motorization have increased striking power both for the offensive and defensive forces, but the offensive force still has the advantage of initiative and earlier concentration. This advantage offers enormous opportunities for success if it is not neutralized by the

enemy's ability to canalize or restrict maneuver, or counteract superiority by the utilization of terrain and combat aviation.
<27>

87. It is essential that the offensive forces have air superiority and that this air superiority is maintained throughout the operation. [Emphasis contained in original.] Combat aviation not only assists the break-through operations by attacks against hostile ground forces in contact, but by attacks against large enemy reserves which may be employed to assist the defender, and by providing pursuit protection [fighter cover] over the area of operations. Aviation has a major function of gaining and transmitting important information prior to...and [during operations]...as well as [reporting those events]...distant from the scene...which may eventually influence the outcome of the operations....Air superiority itself is a tremendous factor in preventing the enemy from gaining timely information. It may prove decisive in gaining surprise over the enemy. <28>

Finally, and most significantly, even in its discussion of the employment of aviation in close support of ground troops, FM 100-15 placed its primary emphasis on air superiority. The following paragraph from chapter seven is taken from the section titled "Employment of Aviation in Close Support of Ground Troops." That section, incidentally, at four pages was second in length only to the "General" information section of chapter seven, and four times as long as the section titled "Air Operations Beyond the Sphere of Action of Surface Forces," which dealt with strategic bombardment.

236. The employment of aviation support of ground forces is affected by the following fundamental considerations:

a. The primary mission of combat aviation is the establishment of air superiority by the destruction and neutralization of effective hostile air resistance. Local air superiority must be maintained to insure effective air support without excessive losses from hostile aviation. <29>

Also, in an implicit acknowledgement of the most effective means for gaining air superiority, and again in the most strongly worded, officially approved language on the subject to date, the manual recognized the need for, and mandated the establishment of centralized control over, all airpower including support aviation. The "General" information section of chapter seven stated:

209. All combat aviation in a theater of operations or similar command is organized as an air force under the theater or similar commander. This organization permits mass employment as well as maximum flexibility in both close support and independent missions. <30>

However, that these features of the doctrine were intended as anything more than lip service to an increasingly influential and opportunistic group of airmen at the War Department, did not seem to be at all well appreciated by ground commanders at all levels in Northwest Africa until after the Battle of Kasserine. <31>

FM 100-15, although profoundly superior to any officially sanctioned doctrine preceding it, did have some fundamental flaws. The first concerned the as yet unresolved conflict on the nature of air superiority and whether its attainment was necessary throughout a theater of operations. The second flaw concerned technical and professional competency as it related to the command and control of airpower in support of ground forces. The third was the perpetuation of the myth that the heavy bomber could not be stopped by local defenses. The remainder of this chapter will explore the first two of these flaws in depth. The third flaw has already been touched

on briefly in this chapter and addressed at length in previous chapters dealing with the doctrine which governed independent air operations.

From the perspective of a professional military analysis, and in light of subsequent events, the authors' intent regarding the geographical extent of air superiority that was necessary to conduct successful operations seems clear. First of all, the manual was written for theater and joint task force level commanders and staffs. Second, it was, in all other regards, a thoroughly comprehensive, scrupulously objective, and truly insightful treatment of the realities and necessities of highly mobile, mechanized air-land combat at the operational and strategic levels of war. Among these realities were the facts that enormous logistical "tails" were absolutely essential for the conduct of continuous, sustained operations relying on air and mechanized forces and, even in 1942, the speed, range, and firepower of airplanes gave commanders an incredibly flexible means of striking those same "tails" upon which the enemy's forces were dependent. <32> However, despite this cogence, and their repeated emphasis on the importance of air superiority, the writers failed to state unequivocally just exactly what they meant by it and precisely how it should be obtained.

A large part of the confusion undoubtedly stemmed from the lack of a clearly stated definition of just exactly what constituted "local air superiority." This lack of definition left a number of important questions not only unanswered, but not even asked. Should "local" mean only the airspace immediately overhead the supported unit, or should it also include the airspace above the airdromes on which the supporting friendly air was based? Or, in consideration of the threat, should "local" instead refer to an area surrounding the supported unit which was equal to the radius of action

of enemy aircraft? However the term "local" was defined, what then was the best way to go about achieving local air superiority?

In the event an adequate warning service was unavailable, as was the case initially in Tunisia <33>, should the supporting air maintain continuous defensive patrols only over the supported unit? Should it instead attempt to prevent, or at least inhibit, the use of airfields surrounding both the supporting and supported units which were within the combat radii of enemy planes? Since this manual and all previous ones maintained that a determined air attack could rarely, if ever, be stopped, how many fighters would be required for a defensive "umbrella" to prevent "prohibitive interference" by enemy air action?

What amount of damage or disruption caused by enemy air action would be prohibitive or at least unacceptable? Were there enough fighters available to maintain these defensive "umbrellas" over all supported, let alone supporting, units? If there were not enough friendly fighters available to put up an effective air defense, would merely having friendly air visible overhead have a beneficial effect on the troops being molested by enemy air? On the other hand, what sort of morale effect would it have on the troops to see their own air cover consistently outnumbered and rarely able to prevent the concentrated efforts of the enemy air from accomplishing its mission?

In that case, would it not be better to use what limited air assets that were available in as great a concentration as possible to systematically eliminate or neutralize the enemy airdromes from which attacks against both the supported ground forces and the supporting air forces could be launched? How long would it take to neutralize the air threat in this

manner, and how long would it take the enemy to regenerate his capability to pose, once again, a significant air threat? For that matter, what constituted a significant air threat?

In all fairness, whoever wrote chapter seven appears to have given the matter at least cursory consideration. The "General" section of this chapter alluded to the problem of attaining adequate security from air attack in the following paragraph:

215. For the protection of our vital military and economic installations the minimum requirement for our striking-force aviation is that it be capable of exerting air power at a distance from these installations greater than the practical operating radius of hostile bombardment. This radius of hostile bombardment is determined by the location of their air bases and the types of aircraft employed. Wise strategic location of our air bases and maximum radius of operation for our airplanes are important factors in gaining superiority of operating range over the enemy. It may frequently require the seizure or occupation of suitable bases and the construction and operation of necessary facilities. <34>

While the logic of this paragraph is irrefutable and the implications so far as the need for counter air force operations are clear, the use of the phrases "our striking force aviation" and "our vital military and economic installations," as well as the total disregard for the toll the enemy defenses might take on "our striking force aviation," indicate once again the profound influence the invincible bomber theory exerted on airpower thinkers. Interestingly, airmen may not have recognized it at the time, and although it was only indirectly linked to the counter-air campaign per se, the final sentence in this paragraph probably offered the single most compelling argument, from an airman's perspective, for the inextricable linkage and the vital necessity for cooperation between the operations of

the air and land components at all levels of war from the tactical through the strategic. <35>

Certainly the preliminary air phase of every single campaign conducted by the Wehrmacht in 1939 through the writing of FM 100-15 in 1942 indicated that the Luftwaffe had not only thought about all these questions, but had come up with some pretty convincing answers to them. In fact, as was pointed out in an earlier chapter, the only times the Luftwaffe failed to achieve decisive results were those occasions on which political interference by Hitler or Goering resulted in the premature abandonment of its primary objective, the neutralization of the RAF. <36> The lesson to be learned from those Luftwaffe failures was not lost on the RAF and the British Army, although the soldiers and airmen in each theater of operations generally seemed to require some additional training in the school of hard knocks to take the lesson completely to heart. <37>

In its failure to provide clear definitions, establish the geographic parameters and temporal limitations of "local air superiority", FM 100-15 perpetuated the notion within both the AAF and AGF that air superiority only in the immediate vicinity of the supported force could be an inexpensive, viable, and indefinitely sufficient alternative to the admittedly difficult and costly undertaking of achieving even local air superiority in support of ground forces as it was then conceived by other modern air forces. An allusion was only barely made to the theater air superiority which ultimately proved necessary to permit the conduct of the AAF's concept of strategic air warfare at tolerable loss rates. Even this allusion, however, was flawed in its refusal to realistically evaluate

possible air threats, and postulate the necessary methods and measures to deal with them. <38>

Disagreements among the airmen themselves certainly contributed to the confusion. FM 100-15 still addressed local air superiority both explicitly and implicitly without including a statement, or even the implication, that, by its very nature, local air superiority could exist only as a condition of more or less limited duration. The duration, of course, would be limited by the persistence and effectiveness of the counter-air campaign. <39>

In fact, the concept of the indefinite extension of local air superiority was still sufficiently seductive to inspire the inclusion in chapter five's "Strategic Withdrawal and Counteroffensive" section of a peculiar statement advocating a sort of negative local air superiority as a form of tactical deception:

106.c. ...Secret movement by day requires absolute air superiority in the area of movement. The requirements of deception may not make this air superiority desirable in the area of withdrawal. <40>

The underlying assumption seems to have been twofold: first, local air superiority could provide a barrier which was absolutely impenetrable to enemy aircraft; and second, since it was only necessary to provide air superiority in the immediate vicinity of friendly troops, the enemy air force would believe that in areas where they could fly without opposition, there would never be troops. Since FM 100-15 was addressed to the commanders and staffs of corps and above, the inclusion of this concept is particularly perplexing. <41>

Given the benefit of hindsight, the notion that an enemy air force could fail to notice the movement of an entire corps, or even larger units, during broad daylight seems incredibly naive today. Although it evidently did not at the time, hindsight should have had precisely the same impact on doctrine writers in 1942 as well. The decisive First Battle of the Marne, which had resulted in the failure of the Schlieffen Plan in 1914, had been made possible by the detection and surveillance of the German 1st Army's vulnerable right flank during its turn to the east while still north of Paris. That discovery had been made and confirmed by aircraft. <42> In this instance the writers seem to have overlooked that crucial function, aerial reconnaissance, which had so endeared the airplane to ground forces and precipitated the need for air supremacy in the first place. <43>

However, the confusion over air superiority was certainly not a major failing on the part of the doctrine writers. With their repeated and emphatic references to the vital need for air superiority and the "aggressive" campaign which would be required to gain it, their hearts seem to have been in the right place. The flaw lay in the failure to explicitly define the term and scrupulously expunge such bizarre notions as the kind expressed subparagraph 106.c. This failure derived from inexperience, and the unfortunate tendency of the futuristic thinking strategic bomber advocates to neglect lessons that had already been learned about air warfare during World War I. The aircraft and weapons of 1914-1918 appeared so antiquated and primitive by 1942 that, especially after Chennault's retirement, any lessons learned in World War I seemed quaintly irrelevant to "modern" war. <44> That tendency to sneer at yesterday's warriors and their weapons, unfortunately, is still all too prevalent today.

Given time and combat experience, the inherent fallacy, and prohibitive expense, of attempting to maintain large numbers of isolated pockets of local air superiority indefinitely over time through the expedient of local fighter umbrellas eventually would have become apparent. That a finite number of planes and pilots would eventually impose temporal as well as geographic limits on local air superiority made that discovery inevitable. <45>

Even had that doctrinal flaw not been corrected, its symptoms might well have been eventually obscured by the sheer weight of the United States' industrial capacity and manpower reserve. The almost limitless ability to support the tactical and strategic learning processes with an ever increasing supply of replacement aircraft and pilots might have subsidized the losses caused by a failure to learn the lesson. <46> As the Soviet experience on the Eastern Front illustrated, that flaw, although horribly expensive, need not have proved ultimately fatal. <47>

The second flaw, the major one, existed because of a fundamental and irreconcilable difference of opinion regarding the use of airpower itself. The authors of FM 100-15 failed to recognize that in order to ensure unity of purpose in a broader context than either direct air support or a pure strategic air campaign, airpower, because it was capable of independent operations, was an element of national military power which had to be considered coordinate and interdependent with the elements of land and sea power. <48> As such, in order to realize its full potential tactically as well as strategically, it was imperative that airpower be acknowledged as the equal of the other two. <49>

This was, however, not necessarily an obvious or easy task for soldiers whose professional experience over the course of many years had led them to equate airpower with "...overpaid, overpromoted, overdecorated, and incorrigible publicity-seekers who invariably claimed for themselves a far greater importance in the nation's military establishment than their battlefield record warranted." <50> This opinion, reflected by Gen. Omar N. Bradley, and shared by many of his ground forces contemporaries, reveals in its very wording, the roots of the misunderstanding, and hence the conflict between airmen and soldiers. Airplanes do not fight on battlefields.

Since the dawn of history when men first picked up clubs and rocks to do battle with one another, mastery of the battlefield through fire and/or maneuver, or their primitive equivalents, was the immediate object of the exercise. All new weapons invented down through the ages - the sword, the chariot, the machinegun, and the tank, for example, had been developed specifically with that end in mind. <51>

Airplanes, although subsequently adapted to war, had not been developed to master battlefields. They could observe and, directly or indirectly, influence activities there, but they could not control ground. In spite of that notable deficiency, however, they could make it difficult, costly, or even impossible for one's enemy to do so. To soldiers, whose whole existence was devoted to control of the battlefield and whose study of history, tactics, and terrain dominated their thinking, plain common sense dictated that any diversion of this new and potent weapon from that task was an unnecessary and, if the enemy were similarly equipped, dangerous waste of resources. <52>

In light of the wild claims Brig. Gen. Billy Mitchell and his disciples in the Air Corps had made about airplanes being able to win wars by themselves, it must have seemed frivolous to even contemplate letting airmen determine how they were going to employ this important new weapon. To many of the most influential soldiers of the day it was patently obvious that the airmen themselves were incapable of intuitively understanding how to employ airplanes. <53> The prevalent feeling among soldiers seems to have been that had the airmen themselves been intellectually capable of this understanding, they would not have been so foolish as to become airmen in the first place. <54>

This attitude had resulted in deliberate repression, and many unnecessary obstacles placed in the path of the development of airpower over the years. The resentment the airmen developed in response to this "redheaded stepchild" treatment became institutionalized in the form of a stubborn preoccupation with strategic shortcuts and a refusal to heed the lessons of the past. The attitudes of both air and ground officers, and the deficiencies in the doctrine these attitudes caused, constituted an incredible amount of inertia to be overcome. Although FM 100-15 was an otherwise masterful piece of doctrine, the acceptance and implementation of all it contained that was well conceived and ultimately proved valid, was to fall victim to this inertia.

Assuredly there were numerous additional reasons behind the initial lack of success experienced by the Allies in Tunisia. Regardless of contributory factors, however, the failure to follow existing doctrine, and the flaws in the doctrine which made that failure almost inevitable, bear a major portion of the responsibility. This is made all the more obvious by

evidence indicating that, although recognized as distinct and serious problems, the disposition, numbers, adequacy, and sustainment of forward airfields needed for effective air support of surface operations were given insufficiently serious consideration to effect solutions. <55>

CHAPTER 6 NOTES

<1> US Army, FM 100-15, Field Service Regulations -- Larger Units (1942): ii.

<2> FM 100-15 (1942): 8, 12.

<3> FM 100-15 (1942): 12.

<4> Wesley F. Craven and James L. Cate, eds., Europe: TORCH to POINTBLANK, August 1942 to December 1943 (The Army Air Forces in World War II) (7 vols., 1948-1958) 2: 88-89, 116-119.

<5> FM 100-15 (1942): 12.

<6> FM 100-15 (1942): 74.

<7> FM 100-15 (1942): 74-75.

<8> FM 100-15 (1942): 76.

<9> FM 100-15 (1942): 81.

<10> FM 100-15 (1942): 81.

<11> FM 100-15 (1942): 82-83.

<12> FM 100-15 (1942): 83.

<13> FM 100-15 (1942): 82.

<14> FM 100-15 (1942): 82-83.

<15> FM 100-15 (1942): 77-78.

<16> FM 100-15 (1942): 77.

<17> FM 100-15 (1942): 85.

<18> FM 100-15 (1942): 18.

<19> Richard J. Overy, The Air War, 1939-1945 (1981): 26-31, 40-44.

<20> Peter Young, ed., Illustrated World War II Encyclopedia (24 vols., 1966) 2: 149-151, 155.

- <21> FM 100-15 (1942): 21.
- <22> FM 100-15 (1942): 21-22.
- <23> FM 100-15 (1942): 28-29.
- <24> FM 100-15 (1942): 31-32.
- <25> FM 100-15 (1942): 79.
- <26> FM 100-15 (1942): 35.
- <27> FM 100-15 (1942): 82.
- <28> Gene Gurney, Five Down and Glory (1958): 149-151.
- <29> Craven and Cate 2: 29, 34-39.
- <30> FM 100-15 (1942): 74-75.
- <31> Paul M. Robinett, Armor Command (1958): 3.
- <32> Erwin Rommel, B.H. Liddell Hart et al, eds., The Rommel Papers (1988): 284-286; Bernard L. Montgomery, Some Notes on High Command in War (1945): 5.
- <33> Daniel R. Mortensen, A Pattern for Joint Operations: World War II Close Air Support, North Africa (1987): 59.
- <34> FM 100-15 (1942): 77.
- <35> FM 100-15 (1942): 77.
- <36> Edward Jablonski, Terror From the Sky (Airwar) (4 vols, 1971) 1: 24-30, 39-46, 61-65, 68-73, 84-85, 96-97, 121-122.
- <37> Arthur W. Tedder, With Prejudice (1966): 163-164, 175, 355, 358.
- <38> FM 100-15 (1942): 77.
- <39> FM 100-15 (1942): 31, 82, 97; Tedder: 358.
- <40> FM 100-15 (1942): 42.
- <41> FM 100-15 (1942): i-iii.
- <42> Barbara Tuchman, The Guns of August (1987): 398-414, 430, 434, 438.
- <43> Ezra Bowen, Knights of the Air (The Time-Life Epic of Flight Series) (1980): 1-12).

<44> Thomas H. Greer, The Development of Air Doctrine in the Army Air Arm, 1917-1941, USAF Historical Study No. 89 (1955): 61-62, 82, 129.

<45> William Manchester, American Caesar: Douglas MacArthur, 1880-1964 (1978): 254.

<46> Wesley F. Craven and James L. Cate, eds., Men and Planes (The Army Air Forces in World War II) (7 vols., 1948-58) 6: xv-xix, xxxiv.

<47> Kenneth A. Steadman, A Comparative Look at Air-Ground Support Doctrine and Practice in World War II, Combat Studies Institute Report No. 2 (1982): 10-11.

<48> Dwight D. Eisenhower, "A Statement on Tactical Air Organization," Air Force Magazine 33 (December 1950): 26.

<49> William Emerson, "Doctrine and Dogma," Army 13 (June 1963): 50-62; Kuter to Commanding General, Army Air Forces, 12 May 1943, 614.201-1, US Air Force Historical Research Center: II.4. (Cited hereafter as USAFHRC.)

<50> John J. Sullivan, "The Botched Air Support of Operation Cobra," Parameters 18 (March 1988): 97-110.

<51> Thomas A. Cardwell III, Air-Land Combat: An Organization for Joint Warfare (1986): 38-39.

<52> Robert F. Futrell, Ideas, Concepts, Doctrine: A History of Basic Thinking in the United States Air Force, 1907-1964 (1971): 16-17.

<53> Greer: 24; Thomas M. Coffey, Hap (1982): 117, 133; Futrell, Ideas: 55; Mark S. Watson, Chief of Staff: Prewar Plans and Preparations (The US Army in World War II: War Department) (1950): 284.

<54> Henry H. Arnold, Global Mission (1949): 15; David R. Mets, Master of Air Power (1988): 12, 20; Cyril Falls, The Great War (1987): 371.

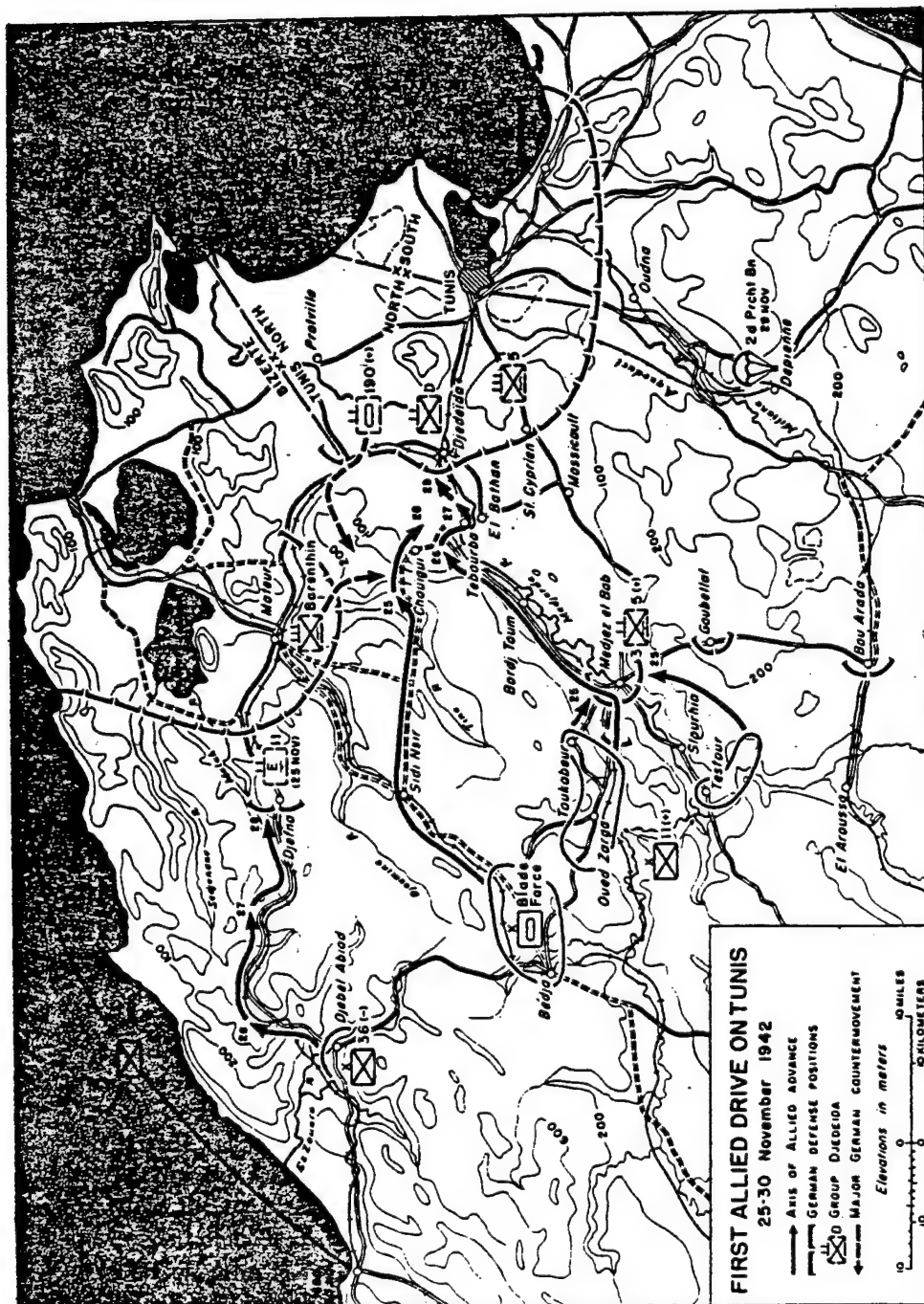
<55> Kuter to CG, AAF, 12 May 43, USAFHRC: II.3.(b).; Dwight D. Eisenhower, "Report on Operation TORCH and the Tunisian Campaign," Joint Operations Review Board, Army and Navy Staff College, Undated, N-7290B, Combined Arms Research Library, Ft. Leavenworth, KS: 21-24.

CHAPTER 7

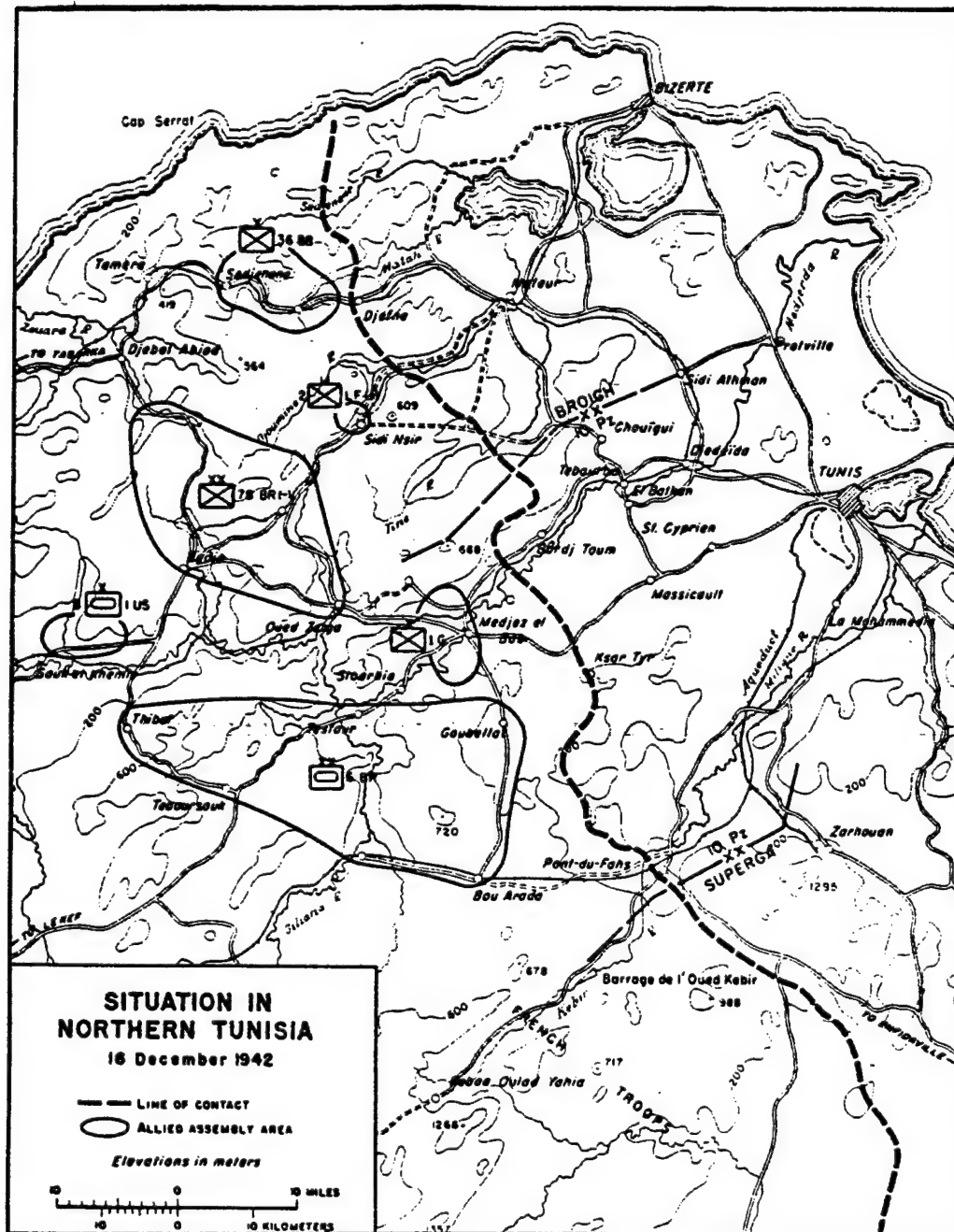
NORTHWEST AFRICA, 8 NOVEMBER 1942 - 18 FEBRUARY 1943: SOUND DOCTRINE DISREGARDED

The weather in Northwest Africa had been atrocious during much of the period from the initial landings in November 1942 right up through, and during, the Kasserine fight in February 1943. The soil in much of Algeria and Tunisia was a very gooey, porous clay which made mud an ongoing and extremely severe problem. To make matters worse, there was a serious shortage of all-weather airstrips throughout the theater. Even those that did have hard surfaced runways generally lacked hardstands. Aircraft not parked on pavement literally became glued to the ground in the sticky mud. <1> These, and other problems which will be examined in this chapter, were symptoms resulting from the failure to observe the principles set forth in FM 100-15. The first of these was the failure to provide mutual support to the "supporting" arm. The second was the failure to recognize the value of airfields as key terrain.

Lt. Gen. Kenneth A.N. Anderson, 1st (British) Army commander, had attributed his stalled drive on Tunis in late November and early December to inadequate air support. Anderson realized and freely acknowledged that this had occurred primarily for "...geographical reasons." <2> One of the geographical reasons was the shortage of friendly air bases close enough to rapidly advancing ground forces to offer adequate protection from hostile



MAP 7-2 (4)



MAP 7-3 <5>

Stuka dive bombers which were based only a few miles away. <6> However, there were a number of critical factors not attributable to geography, weather, or the enemy which greatly exacerbated those "geographical reasons."

There were more than an adequate number of American aviation engineer battalions in theater to assist the British airfield construction groups in Tunisia in remedying the problem. With an eye to the north, however, the Allied Force Commander in Chief, Lt. Gen. Eisenhower, kept these engineers busy constructing airfields in French Morocco and Algeria in order to counter a possible German and/or Spanish strategic envelopment executed through Spain and/or Spanish Morocco. <7>

Although a legitimate military concern, Eisenhower's and the Combined Chiefs' of Staff assessment of the likelihood of such an event appears to have been based more on ideological grounds than a realistic strategic assessment of the political, diplomatic, economic, and military circumstances then existing in Spain. This observation is based, not on hindsight, but on information which, although largely eschewed by the press and liberal intelligentsia, was available at the time. <8> The title of his book, Crusade in Europe, provides a clue as to the almost religious view Eisenhower took of the conflict between the "democratic" Allies and the "fascist" Axis. In the book, his treatment of the planning for Operation TORCH makes repeated references to the serious consequences of Spain's entering the war or allowing Germany to use her territory to conduct operations against the Allies. <9>

The greatest advantage accruing to the Axis from such a course of action would have been the ability to create a bottleneck at the Straits of

Gibraltar. This in turn would have resulted in the severance of the Western Mediterranean sea lines of communication (SLOCs) which would have caused Malta, the precarious position of which had never allowed much margin for error, to wither on the vine. Malta had been a constant thorn in the Axis partners' side and an impediment to success of their Central Mediterranean operations, and hence their North African campaigns, since the beginning of the war. <10>

Although acknowledging that all the advantages which might have accrued to the Germans from such an operation had existed since the beginning of the war, the conclusion Eisenhower reached was that the Germans must have determined such an operation to have been more difficult than it appeared. There never seems to have been any doubt in his mind that if Spain did enter the war or, short of that, allow any gross violations of her sovereignty and/or her territorial integrity, that it would be in favor of the Axis. <11>

However, while ruled by a nominally "fascist" regime which was admittedly beholden to Germany, Spain was nevertheless still recovering from a brutal and utterly devastating civil war which had ended only three years previously. <12> Totally immersed in the myriad problems of recovery and reconstruction, Spanish dictator Generalissimo Francisco Franco had no desire, and very little wherewithal, to become involved in the Axis war with the Western Allies. In point of fact, since November 1940 Franco had been adroitly outmaneuvering Hitler on the diplomatic and political scenes to preclude, not only intentional Spanish participation in the war, but also any unintentional involvement which might result from the Axis use of Spanish soil to conduct operations against Gibraltar or North Africa. Given Spain's

historical treatment of invaders, it seems far more likely that she would have offered armed resistance to any violation of her territorial integrity regardless of the ideological persuasion of the invaders. <13>

More puzzling than this obsessive concern over an unlikely eventuality, however, was the refusal to allot space on railway cars to move pierced steel planking (PSP) to Tunisia for use as runway and hardstand construction material. This was despite the fact that given the mud which had halted his ground advance, the only means by which he could even attempt to strike at the enemy buildup in Tunisia were air forces flying from all-weather airstrips. In the meantime, according to the Army's official historian of the campaign, "The strength of the Axis forces in Tunisia rose during January until it reached a total of approximately 100,000...." <14> Eisenhower later maintained that the logistical situation had been too precarious to give up the hauling capacity of the entire railroad for two days in order to bring up the amount of PSP needed to build one fighter strip. <15>

However, the logistical needs of the ground forces could certainly have been better balanced with those of the air forces than they were. <16> In fact, one of the main benefits which would have accrued to the ground forces from more numerous forward all-weather airstrips would have been the ability to use airlift to a much greater extent to augment the inadequate rail system. There were three Troop Carrier Groups assigned to 12th Air Force (AF) in Northwest Africa, plus another one working for 9th AF in Libya, which hauled supplies wherever and whenever they could throughout the theater. Numbering over 135 aircraft, this airlift force represented a significant capability which was used to good effect wherever it could fly in and out of suitable airstrips in rear areas. <17>

However, heavily laden C-47 cargo planes were no more capable of operations from the mud airstrips in the zone of contact than were bombers or even fighters. Logically, it would also seem that according even a slightly higher priority of rail movement to runway construction materials may well have had the ultimate effect of reducing the ground forces logistical requirements by allowing the air forces to shoulder a greater share of the combat burden in the zone of contact. Nowhere can it be found that anyone seriously advocated hauling construction material to the exclusion of everything else. <18>

In view of the fact that Eisenhower felt that the early capture of northern Tunisia was the key to the strategic lock on North Africa, and that his senior tactical commander at the time had been stymied once already for lack of air support, such lack of initiative on Eisenhower's part can only be explained by a failure to fully understand or appreciate the value of advanced all-weather airdromes. <19> The only reasonable explanation for this lack of understanding goes back to the deep-seated attitudes about air forces discussed in the preceding chapter.

That this "redheaded stepchild" treatment of the air forces existed, even in combat, is nowhere more clearly illustrated than the after action reports compiled by Eisenhower's adjutant general after the initial TORCH landings. From the planning phases through the initial stages of the Northwest African campaign, despite the major roles the air forces were expected to play, their operational and logistical needs and concerns had received a disproportionately small share of the representation in planning and execution. <20>

Once the move into Tunisia began, air force units enjoyed a distinctly low priority in what was already an abysmally inadequate supply system. On the one rail line which was dedicated to its use (out of three which were available), the entire 12th AF was allotted only 250 tons of that rail line's daily total capacity of 400 tons. For XII Bomber Command (BC), which was but one of three major combat commands subordinate to 12th AF, this amount was inadequate simply to keep up with the daily requirements for bombs and ammunition, let alone feed the troops and provide POL and repair parts for ground equipment and aircraft. For the forward located tactical units which had to rely on the largess of the ground force rail systems, operations were strictly a "...hand to mouth affair." <21>

It should not be inferred from this that Eisenhower or any of the other ground commanders harbored any desire for the air forces to make a poor showing. They recognized and freely admitted that airpower was an important component of the combined arms team. <22> However, their failure to adhere to existing doctrine may well have been caused far more by long ingrained attitudes rather than a lack of foresight. Despite conscious acceptance of the value of airpower based on its successful use by the Germans and Japanese in the early stages of the war, the attitudes of these ground officers had, in effect, been institutionalized by the traditionally inferior status of the Air Corps as well as such perennial bones of contention as flight pay. <23>

That these attitudes existed and were at work during the Tunisian campaign is well documented by disinterested observers. Even after positive results had begun to accrue from the reorganization of Allied airpower throughout the Mediterranean Theater, ground officers remained

skeptical about equal treatment for airmen. The AOC-in-C of the newly unified Mediterranean (Allied) Air Command (MAC), RAF Air Marshal Arthur Tedder, visited Eisenhower and his Chief of Staff, Gen. Walter Bedell Smith at Allied Force Headquarters in late March 1943. Tedder remarked that although they had "...accepted our [RAF style] organization loyally...", they really did not like it one bit. <24> As he wrote to RAF Chief of Air Staff (CAS), Air Marshal Sir Charles Portal:

I think most Americans who have seen our organization working admit that it is sound, and produces better results than their own, but at the back of their minds there is always the bitter feeling which exists amongst them regarding separate air forces.
<25>

Lest one be tempted to think that Tedder, because of his own service affiliation, was inclined to take sides with the AAF in this essentially inter-branch bickering of the American Army, the following passage from his memoirs illuminates his views on the matter. During a conversation with Gen. Bedell Smith about the Northwest African organization of the military and its post-war implications, in response to Smith's violent ("over his dead body") opposition to a separate US Air Force, Tedder replied:

...that inter-Service politics in America were no concern of mine, and was able to assure him that I had no intention of engaging in subversive propaganda amongst American personnel. <26>

Smith's attitude towards airmen, whether they were in his Army or not, is illustrated by the conflict which arose between him and Air Vice Marshal Philip Wigglesworth, Tedder's Chief of Staff. In this case, Smith's disdain for airmen, his obstinance, and his zeal in discharging his duties as

Eisenhower's Chief of Staff inspired him to exceed his authority in doing so. According to Tedder:

Before establishing myself in Algiers, I had sent my senior staff officer, Wigglesworth, to serve as a link between me and Eisenhower, but on my arrival at the headquarters...Bedell Smith, Chief of Staff to Eisenhower, took an early opportunity to tell me that Wigglesworth would never fit into the combined headquarters - he was not a co-operator....It transpired that the trouble had arisen because Bedell Smith considered that everything for Eisenhower must be channelled through him as Chief of Staff. On the other hand I, as the [Air] Commander-in-Chief, had the absolute right to communicate direct with the Supreme Commander. On this issue neither Bedell Smith nor Wigglesworth was prepared to compromise to the slightest degree, and both of them were by nature and habit blunt and outspoken - fortunately. <27>

No one can deny that a large part of a Chief of Staff's job is to filter out superfluous noise for his boss. However, the fact that Smith would treat, or even consider, the top airman in the theater - or his personal representative - as "noise" in the midst of a war so obviously dominated by airpower is a very revealing indication of how deeply seated were the attitudes of the most important and influential senior ground officers in the US Army of the period. Nor was this particular incident an isolated instance indicative of only a single individual. Gen. Kuter, then deputy commander of NATAF, later revealed:

There is case after case of my going back to Spaatz or back to Bedell Smith concerning successive groups of senior Army visitors sent over from the states for education to the forward battle area but would never, ever visit the Tactical Air Command. I couldn't get them in; they wouldn't come....the division commanders whom they were visiting were antagonistic as they could be to the tactical concept. It took away 'their' parceled out aircraft....they told the visitors that the Tactical Air Command was just a bunch of RAF cockneys that would try to give them

eyewash on the RAF, and the Americans were under that stupid Kuter who was accepting the RAF position and they'd waste their time. I never got Mark Clark there, not once, and he was presumably going to command the next invasion of Sicily and was training for it back there. <28>

In the Pacific Theater, Gen. Douglas MacArthur, the only member of Billy Mitchell's court martial who had voted for acquittal, was one of the senior ground officers least antagonistic toward airmen. <29> However, his chief of staff, Gen. Richard Sutherland, had also refused to allow his senior airman, Maj. Gen. Lewis Brereton, access to MacArthur when the news of Pearl Harbor was received in the Philippines. In fact, Sutherland would not even relay Brereton's request for permission to dispatch a bombing raid against the fogged-in Japanese bases on Formosa. Although Brereton took what action he could, launching his bombers and keeping them airborne to escape the fate of the Hawaiian based air forces, it was over nine hours between the receipt of that news and the Japanese strike on Clark Field. During that time he was repeatedly denied access to MacArthur. When the Japanese strike finally did come, Brereton's planes were on the ground refueling and most were destroyed. <30>

Despite this extraordinary lapse in judgment, which can only be explained by a lack of understanding of the value of air power and lack of faith in the technical expertise of airmen in its use, MacArthur continued to repose absolute trust in and reliance on his chief of staff. He did so until Sutherland's arrogance and shocking behavior became blatantly contemptuous even of MacArthur. Fortunately for the Allies, in the rapid succession of replacements for Brereton which were cycled through the top airman's position, and subsequently "found wanting" by the chief of staff,

there finally arrived an airman in Lt. Gen. George Kenney who was as willing to go to the mat with both Sutherland and MacArthur on air matters as he was unwilling to shut up and "accept his place" in the "natural order of things." <31>

From Kenney's arrival in the Southwest Pacific there was no question of the value of the command of air forces by airmen there, nor of the recognition of airfields as key terrain. Although the value of protecting the airfields they had in Northwest Africa was also recognized by the Allies, geography did not impose the clearcut imperatives there that it did in the island hopping Pacific campaigns. In Northwest Africa the decisions taken on which airfields were important to seize and protect, and how to protect them, were clearly based more on the immediately available, tactically defensible terrain than on any consideration of the strategic significance of the airfields themselves. The locations and importance of airfields when compared with the disposition of ground troops prior to the Battle of Kasserine supports this hypothesis. <32>

A number of diverse circumstances eventually lead to the series of actions which collectively became known as the the Battle of Kasserine Pass. Among these were the unchecked flow of Axis air and ground reinforcements into Tunisia which led to overwhelming Axis air superiority, and the probing Axis counterattacks that overwhelmed the Allied drive on Tunisia shortly after the initial landings. The eventual onset of winter rains conspired ultimately with the Axis reaction to foil General Anderson's attempts to reach Tunis in December of 1942. The campaign then settled

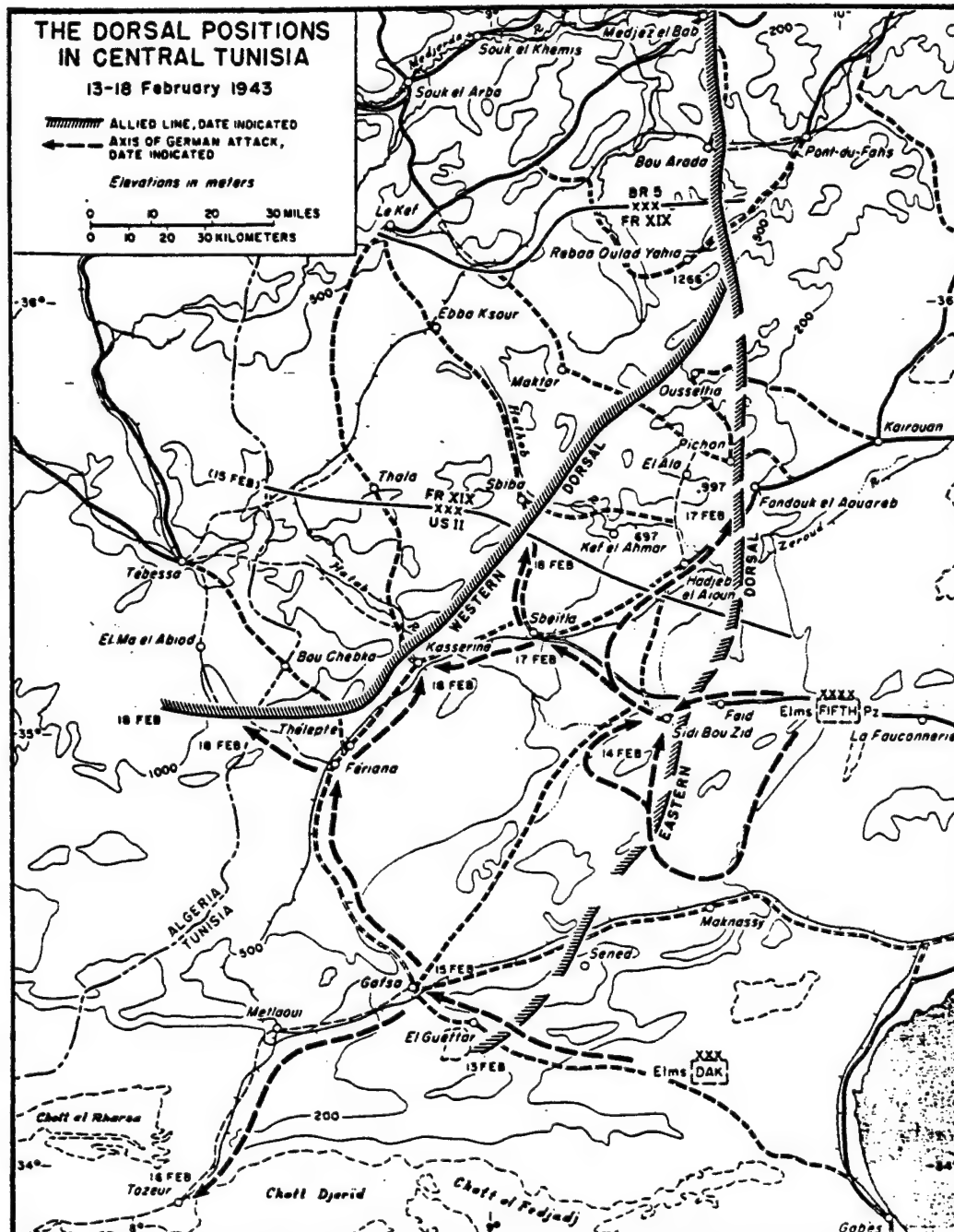
into a series of moves and countermoves by both sides to secure the defiles controlling the approaches from the Eastern Dorsal to the coastal plains.

<33>

Wishing to stabilize a dangerously fluctuating front and simultaneously secure favorable positions from which to continue the offensive in the spring, Eisenhower issued in rapid succession two directives outlining his plans for the defense of the Eastern Dorsale. The first, issued 24 January 1943, ordered Anderson to pursue three objectives in the following order of priority: First, "Reestablish your central forces [XIX (French) Corps] on the line: Fondouk el Aouarab ... Bou Arada." Second, after accomplishing the first task, "Seize and hold the eastern exits of the passes along the line: EL GUETTAR - MAKNASSY - FAID - FONDOUK [el Aouarab]." Third, "...to protect your right (south) flank with particular attention to the air bases in the Tebessa area." <34> In order to reinforce his primary intent, Eisenhower included the following reminder:

You are to bear in mind always that all operations now to be undertaken are for the purpose of facilitating the launching of a powerful coordinated attack as soon as the weather will permit and the necessary forces and supplies can be assembled in position. <35>

It is clear from his prioritization of these objectives, as well as the admonition he included about facilitating further advances, that airfields, although a consideration for Eisenhower, were by no means nearly as important a consideration as the possession of classically defensible



MAP 7-5 <37>

terrain. This is further evinced by the fact that the airfields in the Tebessa area were surrounded by highly defensible terrain. <38>

In view of the amendment he made to the foregoing directive only two days later, someone must have pointed out to Eisenhower that there were airfields farther forward than Tebessa which also deserved consideration. This next directive ordered Anderson to "...protect..." the airfields at three locations: Souk el Khemis; Tebessa; and Thelepte. <39> In the same paragraph and, presumably, therefore with the same degree of priority, he directed Anderson to:

a. ...Secure the defiles at MEDJEZ EL BAB and BOU ARADA which First Army will require when, in conjunction with Eighth Army, the offensive against the enemy begins. <40>

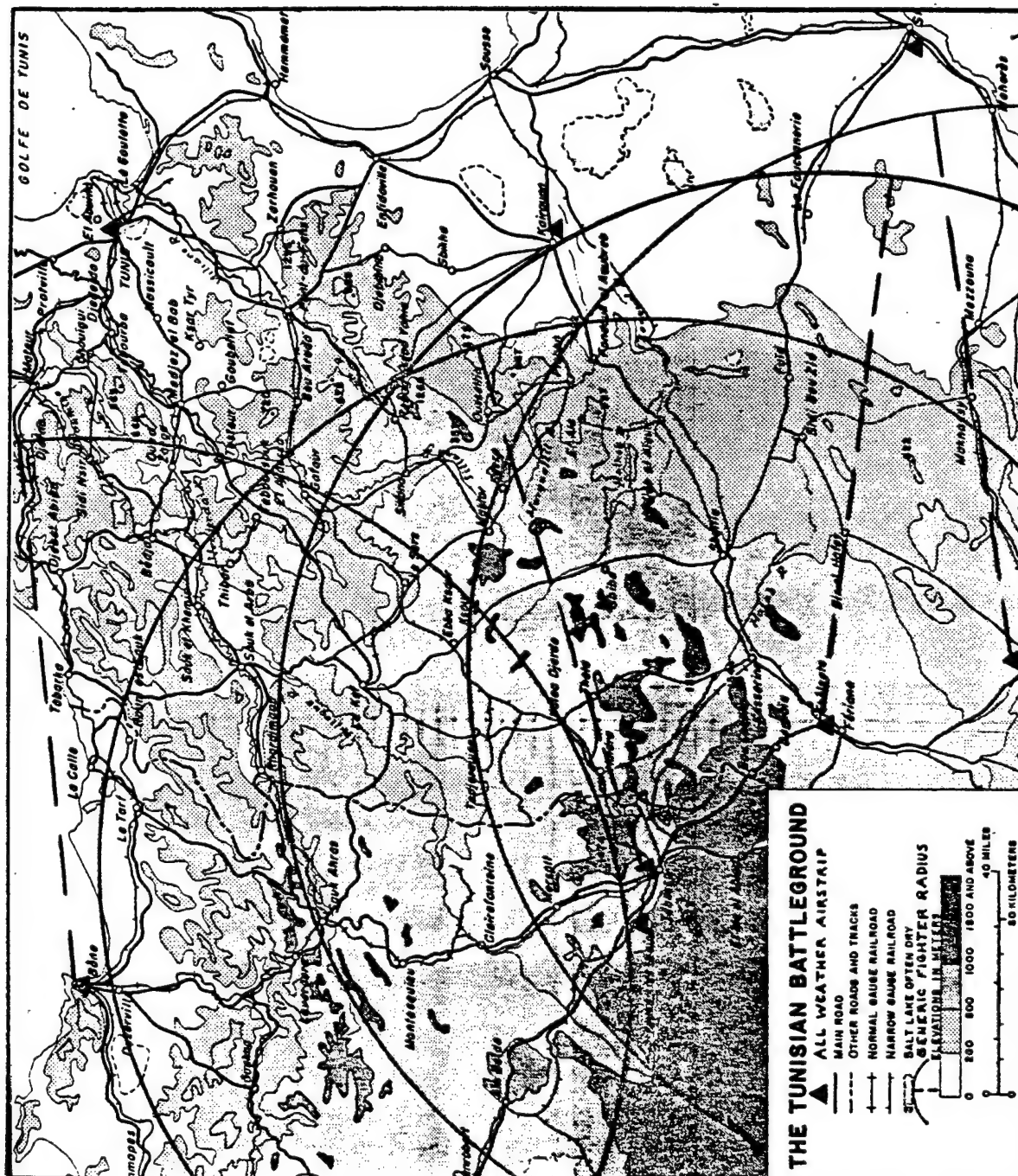
In the next paragraph, although prefaced with the caveat "...without prejudice to the role in a. above...", Eisenhower once again reiterated the importance of securing "...the defiles at present held by the enemy which will improve our position when the offensive begins." <41> Here again, caveat notwithstanding, the implication was clear as to just what was to receive primary consideration in the event a conflict of interests should arise. It is worthy of note here also that, as at Tebessa, Souk el Khemis was surrounded by strongly defensible terrain. <42>

The advanced air bases, a total of five, at Thelepte and Sbeitla, however, were located within II Corps boundaries on an exposed, broad, high, semi-desert plain about twenty miles southwest of Kasserine. They were far less subject, because of the predominantly sandy soil there, to the aircraft miring problems which had been encountered at the bases to the

north and west. Also of great significance, especially in light of the weather conditions which predominated during the most critical phases of the battle, these bases were much less affected by the weather systems which drastically curtailed flight operations from bases located at higher elevations in the mountainous terrain to the north and west. <43> Finally, and perhaps of greatest significance, they were the only bases close enough to the central and southern fronts from which the vast majority of the air support forces, the short range fighters, could operate effectively against high value targets in the enemy's rear as well as remain overhead at the front for more than brief periods providing the highly valued defensive "umbrellas." <44>

Despite their enormous value on this account, the bases at Thelepte and Sbeitla were not directly defended by II Corps. Inasmuch as the naturally defensible terrain was elsewhere, this was somewhat logical. What was not logical, however, was the apparent lack of regard for the strategic significance of these airfields when forces were deployed on a defensive perimeter of the II Corps area in preparation for the series of actions which collectively became known as the Battle for Kasserine Pass. <45>

Additionally perplexing, in light of some providentially fortuitous intelligence regarding German intentions, was the failure to pull back the widely scattered forces so as to have at least some of them concentrated in the somewhat more defensible positions at El Guettar and Gafsa astride the probable main axis of advance. <46>



MAP 7-6 <47>

Evidently feeling that the southern axis of advance was the key to the Allied strategic center of gravity in Tunisia, Afrika Korps commander Field Marshal Erwin Rommel was "...pessimistic about what lay ahead of the force approaching Gafsa." <48> In light of his experiences at the hands of the RAF and, from 1942 on, the 9th (US) AF from Tobruk to the Mareth Line, perhaps Rommel saw far more clearly than his opponents the enormous value the Thelepte airfields represented. <49> In this instance, however, Gen. Juergen von Arnim, commander of Axis forces in Tunisia, proved to be a far more shrewd judge of Allied thinking. Von Arnim, correctly analyzing the zeal with which the Allies sought, and feared the loss of, the approaches to the Bizerte - Tunis - Cap Bon region, was confident the Americans could be fixed in the north, leaving Gafsa and the southern approach lightly held. <50>

For a variety of complex and elsewhere superbly documented reasons far beyond the scope of this study, the Battle of Kasserine went badly for the Allies in general and the Americans in particular. <51> In any event, Thelepte and Sbeitla were evacuated during the period 14-17 February 1943 without a fight and with a loss, at Thelepte alone by various accounts, of from 50,000-60,000 gallons of precious aviation gasoline poured out or burned, and from 18-34 aircraft which, not being in flyable condition, under the press of time were destroyed. <52>

In defense of the inexperience of the American commanders and soldiers invariably blamed for what has come to be known as the "disaster" at Kasserine Pass, it should be noted that they did, albeit with some Allied assistance, eventually rally and stop a tough, professional, and battle hardened foe. Moreover, it should also be noted that they did so with very

little help, during the critical part of the battle, from a largely weathered-in air force. If Rommel's forces had been allowed to run amok in the vulnerable Allied rear, the "disaster" could very well have proved to be of catastrophic proportions. <53>

As to the loss of the vital airfields incurred as a result of the battle, several crucial factors must be considered. To begin with, the physical locations of these bases were extremely exposed. Also, the size of the area over which II Corps' forces would have had to be spread to adequately cover all the possible approaches was enormous. Finally, the size of the Axis forces and the speed with which they approached was so overwhelming it is doubtful the bases could have been successfully defended. However, the Army's official history of the Tunisian campaign typically illustrates the lack of appreciation for the greatest significance of these bases. Noting that supplies, equipment, and unflyable aircraft had been destroyed prior to the evacuation of Thelepte, Dr. George F. Howe remarks that there was little left of "...military value." <54> Little, that is, except the airbases themselves. That, in itself, was a loss which the Allies, in view of their already precarious air support situation, could ill afford.

CHAPTER 7 NOTES

<1> Wesley F. Craven and James L. Cate, eds., Europe: TORCH to POINTBLANK, August 1942 to December 1943 (The Army Air Forces in World War II) (7 vols., 1948-1958) 2: 88-89, 116-119.

<2> Craven and Cate 2: 89.

<3> George F. Howe, Northwest Africa: Seizing the Initiative in the West (The US Army in World War II: Mediterranean Theater) (1985): 285.

<4> Howe: 297.

<5> Howe: 334.

<6> Craven and Cate 2: 88-89; Dwight D. Eisenhower, "Report on Operation TORCH and the Tunisian Campaign," Joint Operations Review Board, Army and Navy Staff College, Undated, N-7290B, Combined Arms Research Library, Ft. Leavenworth, KS: 21-23. (Cited hereafter as CARL.)

<7> Craven and Cate 2: 116-118.

<8> R. Ernest Dupuy and Trevor N. Dupuy, The Encyclopaedia of Military History from 3500 B.C. to the Present (Second Revised Edition) (1986): 1016, 1030-1033. There may also have been an element of paranoia emanating from the British contingent of the Combined Chiefs. Undoubtedly the British, given their historic reliance on sea power, experienced a great deal of anxiety when contemplating their post-war ability to control the Mediterranean. That ability would suffer grievously should the Spanish choose to evict them from Fortress Gibraltar while their attention was diverted elsewhere farther east.

<9> Dwight D. Eisenhower, Crusade in Europe (1948): 43, 79-80, 88, 92-93, 96, 106.

<10> E. B. Potter and Chester W. Nimitz, Sea Power (1960): 519-540, 565-583.

<11> Eisenhower, Crusade: 79, 91-93, 96.

<12> Dupuy and Dupuy: 1016, 1030-1033. The assumption seems to have been that any dictatorship which wasn't communist had to be fascist.

<13> J.F.C. Fuller, A Military History of the Western World (3 vols., 1957) 3: 413-414, 503, 539-540; Fuller 1: 526-546; Fuller 2: 444-445. While it is true that Spain's famous Blue Division fought against the

Soviets on the Eastern Front, Franco's view of that war was much the same as Stalin's: The Great Patriotic War was a distinctly different and separate war from the one being waged between the Axis and the Western Allies. As far as Franco was concerned, there was nothing incompatible between his neutrality in the West and repaying his debt to Hitler by honoring his commitment as a member of the Anti-Comintern Pact. In so doing, he undoubtedly felt some of the atrocities committed by the Republican side's Soviet political "advisers" during the Spanish Civil War could also be avenged. The West, particularly the United States, has always had a great deal of difficulty distinguishing its own romanticized view of the "Holy Alliance" which fought World War II from the more pragmatic interpretations of the same events by various totalitarian regimes. See Peter Young, ed., Illustrated World War II Encyclopedia (24 vols., 1966) 4: 440,446; Young 6: 807; John Erickson, The Soviet High Command (1984): 428-431, 452.

<14> Howe: 370.

<15> Eisenhower, "TORCH," CARL: 23-24.

<16> Craven and Cate 2: 65, 90, 126; T.J. Davis, Lessons of Operation TORCH, Allied Force Headquarters, Staff Memorandum Number 7, 19 January 1943, N-6024, Combined Arms Research Library: 11, 12, 26, 37, 45, 55, 56, 57, 61. (Cited hereafter as CARL.); Interview, Sherrill D. Huff, 4 March 1988, Tape in Author's Personal Files, Ft. Leavenworth, KS. (Cited hereafter as APF.); Letter, Huff to Author, Undated, Received 9 March 1988, Author's Personal Files, Ft. Leavenworth, KS. (Cited hereafter as APF.)

<17> Craven and Cate 2: 56-57, 83, 99, 127.

<18> Eisenhower, "TORCH," CARL: 23-24; Craven and Cate 2: 116-118.

<19> Eisenhower, Crusade: 116; Eisenhower, "TORCH," CARL: 51.

<20> Craven and Cate 2: 65; Davis, CARL: 11, 12, 37, 45, 55, 56, 57, 61.

<21> Interview, Huff, APF; Huff to Author, undated, APF; Eisenhower, "TORCH," CARL: 26; Craven and Cate 2: 90, 126.

<22> Kent R. Greenfield, Army Ground Forces and the Air-Ground Battle Team, Including Organic Light Aviation, Army Ground Forces Study No. 35 (1948): 8.

<23> Greenfield: 6-8; Thomas H. Greer, The Development of Air Doctrine in the Army Air Arm, 1917-1941, USAF Historical Study No. 89 (1955): 1, 24, 79; Mark S. Watson, Chief of Staff: Prewar Plans and Preparations (US Army in World War II: War Department) (1950): 279-280; David R. Mets, Master of Airpower (1988): 15.

<24> Arthur W. Tedder, With Prejudice (1966): 404.

- <25> Tedder: 404.
- <26> Tedder: 405.
- <27> Tedder: 405.
- <28> Interview K239.0512-810, Gen. Laurence S. Kuter, 7-10 October 1974, US Air Force Historical Research Center, Air University, Maxwell AFB, AL: 313-314. (Cited hereafter as USAFHRC.)
- <29> William Manchester, American Caesar (1978): 137.
- <30> Manchester: 206-212.
- <31> Manchester: 402-403, 300-304.
- <32> Letter, Kuter to Commanding General, Army Air Forces, 12 May 1943, 614.201-1, USAFHRC: II.1.b., II.1.b.(2).
- <33> Eisenhower, Crusade: 111, 116, 118, 121, 123-126; Interview, Henry E. Gardiner, 24 March 1988, Tape in Author's Personal Files, Ft. Leavenworth, KS.
- <34> Howe: 384.
- <35> Howe: 385.
- <36> Howe: 375.
- <37> Howe: 404.
- <38> Howe: Fold Out Map V.
- <39> Howe: 385.
- <40> Howe: 385.
- <41> Howe: 385.
- <42> Howe: Fold Out Map IX.
- <43> The AAF in Northwest Africa, No. 6 in the Wings at War Series (Interim Intelligence Reports), (Undated): 46; Craven and Cate 2: 127 & 155.
- <44> Kuter to CG, AAF, 12 May 43, USAFHRC: II.1.b.(2).
- <45> Steven R. Rader, The Battle of Kasserine Pass: Some Lessons for Today, Combat Studies Institute, Military History Anthology (1984): 49.
- <46> AAF in Northwest Africa: 40; Howe: 401, 405, 406, 409.

- <47> Howe: Fold Out Map VI; Craven and Cate 2: 116, 133, & 197.
- <48> Howe: 410.
- <49> Erwin Rommel, B.H. Liddell Hart et al, eds., The Rommel Papers (1988): 186, 236, 276-286.
- <50> Howe: 410.
- <51> Rader: 43-63; Martin Blumenson, Kasserine Pass (1967): 1-310.
- <52> AAF in Northwest Africa: 43; Craven and Cate 2: 154-156;
Howe: 437.
- <53> Howe: 478-481.
- <54> Craven and Cate 2: 132, 138; Kuter to CG, AAF, 12 May 43,
USAFHRC: II.1.b.(2).; Howe: 436-437.

CHAPTER 8

NORTHWEST AFRICA, 18 FEBRUARY-13 MAY 1943: REORGANIZATION AND VICTORY

Almost simultaneously with the beginning of the Battle of Kasserine, the genesis of a solution to another major problem occurred. The problem, incurred by the failure to follow the provisions of FM 100-15, was a lack of unity of effort by the airpower in theater. This lack was due, in turn, to the absence of centralized control over the air forces in the theater by a single air commander with guaranteed access to the Supreme Commander. While the solution to this problem did not come about as a result of the Battle of Kasserine, that battle occurred, in large measure, as a result of the problem. Ironically, this problem, unity of command of the Allied air forces, although solved by a soldier, had been caused mostly by airmen. <1> As Gen. Eisenhower wrote in his Torch/Tunisian after action report:

Another error that should be mentioned was the initial decision not to unify our Air Forces under a single Command. This idea was an original part of the TORCH organizational plan, but I accepted representations made to me, principally by airmen in whom I had the greatest confidence, that the projected use of the American and British Air Forces involved such a wide geographic dispersion that a unified command would be impractical. It will be remembered that following upon the initial landings it was the intent to hurl British Forces, both land and air, into TUNISIA, while the American contingent was expected to find its primary use in solidifying the line of communications through GIBRALTER and to the East.

As the battle flamed up in TUNISIA, the American Air Forces were transported rapidly to the eastward and the British Air Commander was given operational charge of the whole Force.

This did not work. While it is true that our Air Forces had to operate under appalling physical handicaps, it is equally true that our failure to provide for and achieve complete coordination in the early days made us even less effective in the air than we need have been. <2>

The organization of the various Allied air forces from the outset of operations in Northwest Africa had truly been a hydra-headed monster. <3> This came about for a variety of reasons, but the main culprit was the lack of clear operational objectives which resulted from the confusing strategic direction in which the Allies had charged off when they decided to invade Northwest Africa. This lack of objectives led Maj. Gen. Carl A. Spaatz, then 8th AF commander and Eisenhower's senior American air advisor in Europe, to complain as late as the week prior to the actual TORCH landings that "...he had never understood 'what, when, and where' the Twelfth [12th AF] was to do..." following the assault phase. <4>

As the AAF official history described it:

The TORCH air plan, issued 20 September, reflected the central weakness of the entire operation. Although Eisenhower had a naval commander--Admiral Cunningham, with a brilliant record in the Middle East--and had wanted an air force commander, Allied Force ended with two separate air commands. These commands were separate as to nationality, tasks, and areas of responsibility and operations, corresponding in general to the projected division of the ground forces into the American Fifth and British First Armies. <5>

Those two air commands were the British Eastern Air Command (EAC) under Air Marshal Sir William Welsh and the 12th AF commanded by Brig. Gen. James H. (Jimmy) Doolittle. These organizations reported directly to Eisenhower, whose staff included an RAF "...assistant..." and an AAF "...deputy assistant chief of staff for air to 'coordinate' air planning." <6>

Allied Force Headquarters then retained responsibility for shifting air forces between commands as necessity dictated, and of providing centralized control over air operations in support of naval forces. This was critical because the single naval component commander "...could not be expected to negotiate separately with each air command." <7>

Although naval air was to support the initial landings at Casablanca, Oran, and Algiers, as soon as airstrips had been captured ashore, land-based air provided by the EAC and 12th AF was to fly in from various locations to relieve the US Navy and Royal Navy aircraft carriers. <8> Because the initial landings were so widely dispersed and the objectives of the operations to be conducted subsequent to those landings were so unclear, 12th AF itself was very loosely organized to cope with its immense geographic area of responsibility and a wild variety of contingencies in mind. <9>

As late as 30 October 1942, 12th AF was prepared to: Support a second set of landings, codenamed BACKBONE, near Tangiers; conduct operations against the Iberian peninsula should the Germans penetrate Spain and/or Franco's neutral status change, and; move eastward from Morocco to operate against Rommel or conduct an air offensive against Italy. These final tasks had to wait, of course, until Tunisia was cleared of Axis forces and the Allies could reach some definite conclusions about what their strategy should be. <10>

To meet the challenge of both supporting surface operations immediately following the initial landings and preparing for the variety of possible contingencies subsequent to the landings, 12th AF's subordinate commands were introduced to the theater as relatively independent entities.

In accordance with the guidance contained in FM 1-5, 12th AF had been organized into: striking forces--XII Bomber Command (BC); defense forces--XII Fighter Command (FC); (ground-air) support forces--XII Air Support Command (ASC); special forces--51st Troop Carrier Wing (TCW); and an organic air force logistic support element--XII Air Force Service Command (AFSC). <11>

12th Air Force Organization
(Prior to 18 February 1943)

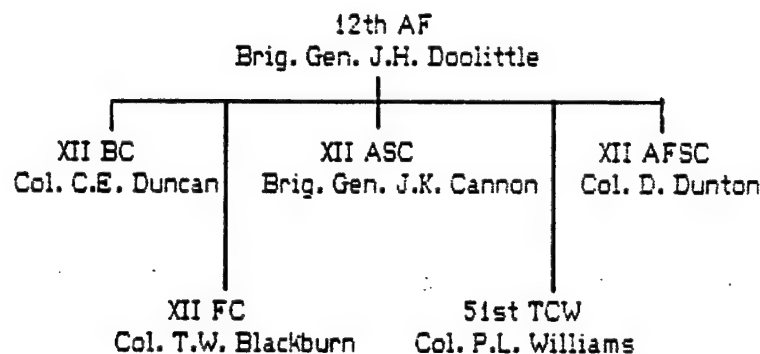


Figure 8-1 <12>

However, rather than functioning as subordinate units acting in concert with a coherent central plan directed from 12th AF headquarters, these organizations were separated into two practically autonomous chunks. While 12th AF commander Doolittle remained at Gibraltar with Eisenhower during the assault phase, XII ASC commander, Brig. Gen. John K. Cannon, went ashore in Morocco under the command of Maj. Gen. George S. Patton's Western Task Force. Doolittle's A-3, Col. Lauris Norstadt commanded the Oran air force, comprising elements of XII FC and XII BC, under Maj. Gen.

Fredendall's Center Task Force. The Eastern Task Force's lodgement was supported by Air Marshal Welsh's EAC. <13>

Although this organizational scheme had been devised in an attempt to foster unity of command for each of the landing task forces in the assault phase, an unfortunate precedent was established by severing the command and control links between the various subordinate elements of the 12th AF and their higher headquarters. The commanding officers of these air force elements were junior to, and received their operational guidance from during and in the immediate aftermath of TORCH, the Task Force commanders whose surface operations they supported. This arrangement gave Fredendall and Patton the idea that the air forces within their areas of operations belonged to them exclusively. This was a concept which, although doctrinally incorrect, was to carry forward into the Tunisian campaign, even after the reorganization, with unfortunate consequences. <14>

When Doolittle arrived in North Africa from Gibraltar, he regained control over XII BC and XII FC, but half of his air force, XII ASC, was now his to command in an administrative sense only. By 19 November 1942, Doolittle himself had further exacerbated matters when he instituted his concept of "composite commands." This further broke apart 12th AF, assigning each of several composite commands responsibility for air matters within geographical districts across the North African littoral. These composite commands were composed of the headquarters elements of XII ASC at Casablanca, XII FC at Oran, XII BC at Constantine, and 12th AF headquarters itself in Algiers. <15> When the EAC was later given operational control of elements of XII ASC for the drive on Tunisia, as

Eisenhower's after action report indicated, the lack of positive command and control over, and the poor results yielded by, all the widely separated elements of the allied air forces proved totally unsatisfactory. <16>

To Eisenhower's everlasting credit, although he may not have been aware of, or even understood, all the reasons causing the problems with his air forces, he did realize that, not being an airman, it was just possible that he might possess neither the technical nor the tactical competence to solve those problems himself. More importantly, instead of relying on intuition, as was undoubtedly a great temptation given that he felt that his airmen had given him a 'bum steer' to begin with, he sought, listened to, and heeded the advice of a combat experienced airman. That airman was the RAF's Air Marshal Arthur Tedder. Tedder's experience had come during his tenure as AOC-in-C of the RAF Middle East Command (MEC), which comprised the Middle East Air Forces (MEAF) in Palestine, Greece, Crete, Iraq, and Persia, as well as the Western Desert Air Force (WDAF) in Egypt and Libya. <17>

Faced with numerous other vast, complex, and potentially catastrophic problems, Eisenhower sought and received, based on Tedder's advice, the necessary authority to bring true unity of command for all the services to the Northwest African theater. Perhaps of greatest significance, because of the precedent it set for the Allies' eventual conduct of the war on the continent, out of this reorganization sprang unified commands for all the Allied air and naval forces throughout the entire Mediterranean area. <18>

The air organization, under Tedder's overall command, was known as the Mediterranean Air Command (MAC). The organizations immediately subordinate to MAC were: the RAF Middle East (RAF ME); 9th (US) Air Force; RAF Malta Air Command (RAF MAC); and Northwest African Air

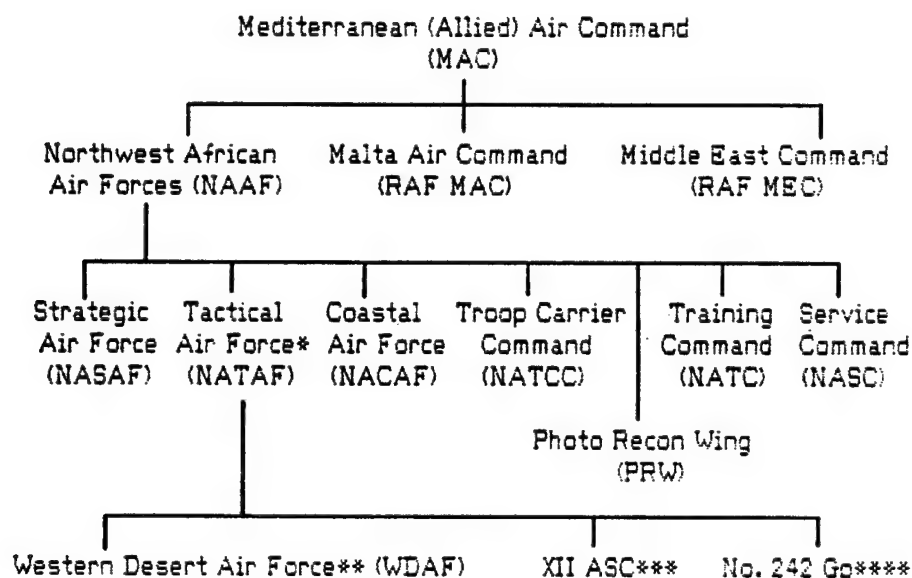
Forces (NAAF). With a unified air command established over the whole of the Mediterranean area, Tedder experienced far less difficulty prying forces loose from less critical portions of the theater than was theretofore the case. <19>

Interestingly, the Combined Chiefs of Staff and the various ground force commanders throughout the Mediterranean area evidently failed to see sufficient justification for implementing a similar unified land component command. In lieu of this, arrangements were made that when Gen. Bernard L. Montgomery's 8th (British) Army crossed an agreed upon boundary between the Allied Force in Northwest Africa and the British Middle East Command, it would pass to Gen. Eisenhower's control under the newly created 18th (Allied) Army Group. This army group would then be the Northwest African land component counterpart to the NAAF which Eisenhower's top American airman, Lt. Gen. Carl Spaatz, commanded. <20>

Spaatz organized the NAAF along functional lines, the subordinate commands being charged with specific objectives and responsibilities. The Northwest African Strategic Air Force (NASAF), for example, was composed of heavy and medium bombers and long range escort fighters. It "...conducted strategic bombing of enemy held ports and airdromes in Tunisia, southern Italy, Sardinia, and Sicily." These posed the strategic threats with which Gen. Eisenhower, the Allied Force Commander in Chief, was most concerned. Additionally, when the ground situation demanded, NASAF augmented NATAF. On those occasions its missions were "prescribed by and closely coordinated with the operations of..." NATAF. <21>

Eisenhower and Spaatz, maintaining close contact with one another, enjoyed a high degree of mutual trust and regard. They were in a unique position to determine, from their constant communications with subordinate commanders, both the air and ground situations which in turn constituted

Allied Air Forces Unified Command Organization,
Mediterranean Theater of Operations
(Activated 18 February 1943)



Habitual Associations

* 18th Army Group

*** II (US) Corps

** 8th (Sr) Army

**** 1st (Br) Army

FIGURE 8-2 <22>

the "big picture." As such, they were able to judge, and agree upon, whether such augmentation of NATAF was warranted. <23>

NATAF in its own right consisted of the RAF's No. 242 Group in Northern Tunisia, the AAF's XII ASC in Central Tunisia, and the WDAF in the south. Each of these subordinate units retained, for liaison, planning, and logistical purposes, an habitual association with a ground forces counterpart. NATAF was itself commanded by Air Vice Marshal Arthur ("Maori" or, alternately, "Mary") Coningham, an RAF veteran of the campaigns in the Western Desert. Tedder described the thought processes he used in devising a name for this important organization which would operate in close cooperation with the ground forces:

Long experience determined me to avoid the use of the title 'Air Support Command' for Coningham's charge. I found intense opposition to the title of 'Tunisian Command' and so came to the conclusion that the functional title 'Tactical Air Force' was the right one. The retention of the title 'Twelfth Air Support Command' in Central Tunisia was a sop to sentiment which I thought it necessary to allow. <24>

This "sop to sentiment" was, in truth, a genuflection to political realities. American ground officers had no intention of conceding that, if not all, a significant portion of the air forces should not be dedicated exclusively, at least in name, to the close support role. <25> The perpetuation of this misconception contributed in part to a conflict which would later arise between Coningham and Patton over the direction of XII ASC. <26> This sentimental semantic mistake would not be repeated in organizing new air forces after the Tunisian campaign.

Coningham's mission was to "operate in support of the ground troops."

<27> The wording of this mission statement, provided by Gen. Spaatz, is highly significant because it granted Coningham a measure of latitude in deciding how best to proceed in its accomplishment. This latitude enabled him to make an estimate of the tactical air situation and to determine all the implied and essential tasks as well as the stated one of providing air-ground support. <28> The first order of business as Coningham saw it was to get control of the air situation, as he had done when he commanded the WDAF under Tedder. He knew from bitter experience that unless he did control the air, he would not be able to "operate in support of the ground troops." Having had extensive experience battling the Luftwaffe and the Africa Korps from El Alamein to Mareth, Coningham knew that getting control of the air situation meant first and foremost getting control of the Luftwaffe. <29>

As he stated in the first order he issued on assuming command of NATAF, Coningham saw his mission in these terms:

1. The directive given to North West African Tactical Air Force by General Spaatz is to provide maximum air support for land operations.

2. The attainment of this object can only be achieved by fighting for and obtaining a high measure of air supremacy in the theater of operations. As a result of success in this air fighting our land forces will be enabled to operate virtually unhindered by enemy air attack and our Air Forces will be given increased freedom to assist in the actual battle area and in attacks against objectives in rear. <30>

To obtain this "high measure of air supremacy," Coningham proposed two phases which would be conducted simultaneously in the air campaign.

These were to consist of: "...(i) A continual offensive against the enemy in the air..." and "...(ii) Sustained attacks on enemy main airfields."

Cunningham fully recognized that, given his primarily short range fighter assets, it would be practically impossible to completely eliminate all enemy air activity "...on a front of 250 miles." He therefore provided for concentration of effort in the most critical areas by directing his subordinate commanders to maintain a high degree of mobility in their support elements in order to facilitate rapid geographical shifts of units along that front. <31>

As a result, the US Army's official historian concluded:

...the reorganization...was destined, through use of the ground-air doctrines tested in Libya, to promote by painful but inexorable steps the achievement of Allied air supremacy in Tunisia. <32>

Admittedly, as this description implies, there were instances when American ground forces in particular did not feel they were deriving the full benefit of Allied air superiority. <33> However, it must be recalled that, although they were increasing in strength relative to the Luftwaffe, the Allied air forces were still not an unlimited commodity. In accordance with Cunningham's principle of concentrating effort in critical areas, and the necessarily attendant economy of force in areas which were less critical, this was bound to happen.

Additionally, in light of the Kasserine experience, the land component commander, 18th Army Group Commander British Gen. Harold Alexander, was hesitant to, and in fact did not, use II Corps in other than a supporting role for the remainder of the campaign. <34> Since Alexander and Cunningham

were not particularly inclined to use a great deal of their now centrally controlled, but nevertheless still numerically limited, air forces in a manner that did not directly support the main effort, the result was that American ground forces got little of what they still considered to be "their" air support. <35>

That the hypothesis of "out of sight, out of mind" led the American ground forces to assume that "their" air forces were either idle or engaged in some sort of "independent," and therefore trivial and non-supportive, "air war" is strongly suggested by the nature of a series of acrimonious messages exchanged between Coningham and then II Corps commander, Lt. Gen. Patton. This affair was recorded by a number of people, including Howe in the Army's official history, Omar Bradley in both versions of his memoirs, Kuter in a magazine article, Tedder in his memoirs, and Martin Blumenson in The Patton Papers. <36>

The incident itself was initiated when Patton's G-3 included in the 1 April 1943 II Corps situation report (SITREP) the observation that:

...front-line troops in the corps area had been "continuously bombed all morning" by German planes. The reason according to the Sitrep, was: "Total lack of air cover for our (ground) units has allowed German air force to operate at will." <37>

Patton, probably reacting to the death of his aide that morning in one of the German air raids, disseminated this SITREP over his signature throughout 18th Army Group, an unusual distribution of a corps SITREP. <38> In response to this stinging accusation, Coningham, whose doctrine had been to furnish air support "...without stint..." hotly responded with a message of his own...also widely disseminated. <39>

It is to be assumed that intention was not to stampede local American Air Command into purely defensive action. It is also assumed that there was no intention to adopt discredited practice of using Air Force as an alibi for lack of success on ground. If Sitrep is in earnest and balanced against...facts [6 KIA for period in question], it can only be assumed that II Corps personnel are not battle-worthy in terms of present operations. <40>

Cunningham's implication "...that II Corps personnel concerned [were] not battle-worthy..." was seen as nothing less than a deliberate, malicious slur on the honor of American troops. <41> Both Blumenson's account and Bradley's second version indicate that Patton's original signal and unusually widespread dissemination of the SITREP which provoked Cunningham's response were at least partially responsible for the affair. <42> However, Bradley's second version of the Luftwaffe attack which killed Patton's aide neglects to mention some of the pertinent details he had included in his earlier account. <43>

Kuter, a participant in and witness to the whole affair, said the incident was portrayed in the 1970 motion picture "Patton" in a manner inconsistent with his recollections. He was upset, first of all, by the innuendo the film made, through the absence of any Allied planes whatsoever depicted in Tunisia, that the Allied air forces were either completely negligent or totally incompetent. Reinterested then and angered enough to reread Bradley's original memoirs, he responded to what he saw there, and elsewhere, as blatant revisionism. He published his account in the February 1973 issue of Air Force Magazine in an article titled "Goddammit, Georgie!" <44>

Kuter pointed out that in Bradley's first version he had described what appeared to be a complete disregard for cover and concealment at the

battalion headquarters Patton's party had been visiting when a few German planes attacked, killing the aide and two other soldiers. He also quoted Bradley as recording that the gun crews of several nearby anti-aircraft batteries had even failed to engage the enemy planes (presumably, according to Bradley, in the hope they might escape detection themselves). <45>

According to Blumenson, Patton himself admitted to his brother-in-law a few weeks later that the battalion command post personnel had not practiced sound security procedures in connection with their use of high powered radio transmissions. Their failure to relocate every four hours or so had allowed the Germans to triangulate their position and launch a force of twelve JU-88 bombers to attack what appeared electronically to be a lucrative target. <46>

Tedder had a slightly different version as well. Although he was very angry with Coningham for the latter's intemperate sarcasm in response to II Corps' complaints, Tedder provided the complete text of Coningham's message (something no one else did in their account) and pointed out that II Corps' total casualties for the period in question numbered only six. <47> The text of Coningham's message, incidentally, although bitingly sarcastic, is more on the order of a personal rebuke aimed at Patton and his staff, and obviously intended to discourage them from trying to bully XII ABC into disregarding Coningham's directives and resuming continuous local defensive patrols. The tone of Patton's message and the II Corps SITREP which initiated the entire affair was in much the same vein as Coningham's response. <48>

Although Patton claimed II Corps "...had 15 men killed, 55 wounded, and sustained 51 air attacks in which 161 [German] planes took part," the

official II Corps history does not bear this out. <49> One cannot help but wonder if the figures in Patton's diary entry might not have been somewhat exaggerated with an eye to preserving an account favorable to himself for future historians.

Inasmuch as Patton neglected any mention whatsoever of this episode in his memoirs, if one subscribes to Douglas Southall Freeman's hypothesis that Patton used his criticism as a direct fire weapon to get immediate and decisive results, it would seem that his SITREP had been intended primarily as a goad to correct what he saw as an unfair distribution of air support. <50> Happily, reports Tedder, following an obligatory petulance, Patton graciously accepted Coningham's official apology. <51>

In fact, Tedder relates, as a postscript to the the meeting at Patton's Gafsa headquarters, the incident depicted in the film:

When we had settled it all and the three of us were arm in arm over the odd drink, there was the sudden noise of rifle, machine-gun, and anti-aircraft fire, and three F.W. 190s scooted across about two hundred feet up. I nodded to George Patton, and said 'I always knew you were a good stage manager, but this takes the cake.'...Patton's summing up was: 'If I could find the sonsabitches who flew those planes I'd mail them each a medal.' <52>

It is also interesting to note that while Tedder mentioned this almost in passing and as an amusing anecdote illustrating Patton's sense of humor and the strange coincidences of war which sometimes bind men more closely together, the II Corps operations report for the period described the three enemy fighters transiting the area at low altitude and high speed (i.e.: 'buzzing') in the following, slightly more dramatic, manner: "At 1500 hours, during [the] conference, CP [Command Post], II Corps was bombed. <53>

Tedder, seeing the mischievously expansive mood in which Patton now seemed to be, felt:

Taking the long view, I thought the effect might be good. Patton was now a friend of ours and I thought that the chance of bellyaching signals from the Army would be greatly reduced....Apart from this incident, co-operation between land and air forces, British and American, was developing well, and I thought the general atmosphere excellent. <54>

However, the postscript Bradley included in his second version of the affair reached a different conclusion entirely. Seeing the confrontation in terms of airman versus soldier, and in particular, British airman versus American soldier (for it was the British airman, Coningham, after all, who was withholding the full measure of II Corps' "own" air support from them). Bradley reports Eisenhower's later intervention in the matter. In a letter Eisenhower wrote to Patton several days later, he held Patton responsible for the furor in the first place because of the "...unwise distribution of your SITREP." <55>

Chiding him for his petulant insistence on a "...public retraction or apology..." from Coningham (another very strong-willed individual). Eisenhower urged Patton to realize:

'...that the great purpose of complete Allied teamwork must be achieved in this theater [emphasis in original] and it is my conviction that this purpose will not be furthered by demanding the last pound of flesh for every error, when other measures would suffice...' <56>

Emphasizing his feelings about "Ike's" mollycoddling of airmen in general, and British airmen in particular, Bradley concluded:

He [Eisenhower] advised Patton that if in the future he felt critical of another service it should be expressed in a 'confidential report to the next military superior only.' [emphasis in original] This letter was further proof to us that in Ike's eyes the British could do no wrong. <57>

Nevertheless, despite such internecine squabbles, by late April 1943 the Allies had achieved such a "...high measure of air supremacy in the theater..." that one fighter pilot of the 33d Fighter Group, who did not enter combat until then, related that he "...never fired [his] guns at an enemy aircraft at all until the Group moved up to Sicily..." the following summer. <58>

The Allies now possessed an organization which enabled their air forces to systematically defeat the Axis air forces in detail. These same Axis air forces, reinforced throughout the campaign over interior lines of communication had, despite their numerical inferiority, unquestionably held the upper hand just a few months earlier. The most significant benefit derived from this virtual air supremacy, of course, was the prevention of a German "Dunkirk" by sea or a repetition of the Luftwaffe's airlift triumph during the winter of 1941-42 at Demyansk on the Eastern Front. <59>

The result of this combined arms success which had been made possible only by air forces under the unified command of airmen was the trapping of some 275,000 Axis soldiers which would not have to be faced again in Sicily or on the continent. <60> However, the idea that air forces should be commanded by airmen and accorded coequal status with ground forces was still not a concept easily swallowed by senior American ground officers.

In his memoirs, Tedder relates a conversation with Eisenhower's chief of staff, Gen. Bedell Smith, in which Smith remarked that, although as a good

soldier he was obliged to give the new air set up the support necessary to make it work, it did not change his mind about postwar organization in the US. As Tedder put it, "So far as he [Smith] was concerned, a separate Air Force in America 'would come only over his dead body'." <61>

Tedder seemed rather amused by this attitude on the part of the senior American ground officers about the unified command structure which had worked so well in the Western Desert. However, he must have recalled with an ironic sense of déjà vu that it had only done so there once the British Imperial General Staff and the Admiralty had been persuaded finally to accept it. As he wryly observed in a letter to Air Chief Marshal Sir Charles Portal, British Chief of Air Staff:

They are instinctively antagonistic to it and find it difficult to understand that every General has not a divine right to command his own private air forces, and incidentally a divine inspiration by which he knows better than anyone else how those air forces should be employed. <62>

Despite whatever hostility ground officers may have felt in reaction, the fundamental concepts for the sound command and employment of air power were now in place in a functional, battle-tested combat organization. Those concepts were, of course, that there must be unified command of air forces under technical and tactical experts (i.e.: airmen) and that whatever else an air force might be employed for, its first and most critical task was the destruction or neutralization of the enemy air force to achieve and maintain air superiority. The hugely successful results were plainly apparent for all to see. The stage had been set for the doctrinal emancipation of air power within the US Army.

CHAPTER 8 NOTES

<1> Dwight D. Eisenhower, "Report on Operation TORCH and the Tunisian Campaign," Joint Operations Review Board, Army and Navy Staff College, Undated, N-7290B, Combined Arms Research Library, Ft Leavenworth, KS: 51. (Cited hereafter as CARL.)

<2> Eisenhower, CARL: 51.

<3> Wesley F. Craven and James L. Cate, eds., Europe: TORCH to POINTBLANK, August 1942 to December 1943 (The Army Air Forces in World War II) (7 vols., 1948-1958) 2: 52-58, 107-108.

<4> Craven and Cate 2: 42-50, 54.

<5> Craven and Cate 2: 53.

<6> Craven and Cate 2: 53-54.

<7> Craven and Cate 2: 53-54.

<8> Craven and Cate 2: 67.

<9> Craven and Cate 2: 54.

<10> Craven and Cate 2: 54.

<11> Craven and Cate 2: 52-55; Maurer Maurer, ed., Air Force Combat Units of World War II (1961): 394-395.

<12> Craven and Cate 2: 54, 56.

<13> Craven and Cate 2: 67-78.

<14> Craven and Cate 2: 67-91; George F. Howe, Northwest Africa: Seizing the Initiative in the West (The US Army in World War II: Mediterranean Theater) (1985): 573-574; Omar N. Bradley and Clay Blair, A General's Life (1983): 147-148; William A. Tedder, With Prejudice (1966): 410-411; Laurence S. Kuter, "Goddammit, Georgie!", Air Force Magazine 56 (February 1973): 51-56; George S. Patton, Martin Blumenson, ed., The Patton Papers, 1940-1945, (2 Vols., 1972-1974) 2: 203-210.

<15> Craven and Cate 2: 83-84.

<16> Craven and Cate 2: 85-91.

<17> Wesley F. Craven and James L. Cate, Plans and Early Operations, January 1939 to August 1942 (The Army Air Forces in World War II) (7 vols., 1948-1958) 1: 590-591; Craven and Cate 2: 60-66, 106-110; Tedder: 369-371, 374-375, 382-383, 395-396.

<18> Craven and Cate 2: 106-110, 112-115, 140; Howe: 354-355.

<19> Letter, Spaatz to Commandant, US Army Command and General Staff College, 28 May 1943, Incl. 1, N-6046, CARL: 1; Craven and Cate 2: 161-165; Howe: 354-355, 486FO. This organization would later become known as the Mediterranean Allied Air Forces (MAAF) under the command of Lt. Gen. Ira Eaker when Eisenhower selected Tedder to serve as his deputy for the Normandy Invasion and brought former 12th AF Commander, Lt. Gen. James (Jimmy) Doolittle to England, replacing Eaker as Commander of the 8th AF. This was a bitter pill for Eaker to swallow. Eaker had moved up from VIII Bomber Command to assume command of 8th AF when Eisenhower summoned Spaatz from England to Africa. He had brought the 8th AF from its difficult infancy of repeated false starts through an agonizing and costly growth period to a point where sufficient strength and experience had finally been attained to begin achieving its objective of gaining and holding air superiority over the continent. Eaker blamed Arnold's impatience with the lack of progress to that point for this change. The more likely explanation, however, was that Eisenhower, not having dealt much with Eaker before, preferred a known quantity, Doolittle, as the airman who would command the American strategic air force tasked with direct support of the invasion. See Dewitt S. Copp, Forged in Fire (1982): 372-377; 444-452.

<20> Craven and Cate 2: 106-110, 112-115, 140; Howe: 354-355.

<21> Spaatz to Cmdt, USACGSC, 28 May 43, Incl. 1, CARL: 1.

<22> Phillips Melville et al, Air Operations in Support of Ground Forces in Northwest Africa (15 March - 5 April 1943), VIII Air Support Command Observer's Report, Annex I, 1 July 1943, 532.4501, US Air Force Historical Research Center: i-3. (Cited hereafter as USAFHRC.); Spaatz to Cmdt, USACGSC, 28 May 43, Incl. 1, CARL: 1-2. Elements of the 9th (US) AF were also assigned OPCON at various times to MEC, NASAF, NATCC, WDAF, and XII ASC until withdrawn from the Mediterranean theater in the autumn of 1943 to form the nucleus of the American tactical air force designated to support OVERLORD and subsequent operations in Northwest Europe.

<23> Edgar F. Puryear, Jr., Stars in Flight (1981): 82-84; William W. Momyer, Airpower in Three Wars (1978): 42-43.

<24> Tedder: 397.

<25> Tedder: 398, 404-405.

<26> Tedder: 395-396, 397, 399, 410-411; Howe: 573-574; Bradley, A General's Life: 147-148; Kuter, "Goddammit, Georgie!": 51-56; Patton, Blumenson, ed.: 203-210.

<27> Spaatz to Cndt, USACGSC, 28 May 43, Incl. 1, CARL: 1.

<28> Letter, Kuter to Commanding General, Army Air Forces, 12 May 1943, 614.201-1, USAFHRC: II.2.-II.4.; Momyer: 42-43.

<29> Tedder: 142, 162, 175, 211-212.

<30> Arthur Coningham, HQ NATAF, General Operational Directive, 20 February 1943, N-3497, CARL: 1. This document is part of an unorganized and unindexed collection of original documents compiled by Col. Wilfred H. Hardy and titled "Operations in Northwest Africa." It was originally included as Annex 2 with the 12 May 43 Kuter letter to the CG, AAF.

<31> Coningham, CARL: 1.

<32> Howe: 493

<33> Howe: 573.

<34> William G.F. Jackson, The Battle for North Africa, 1940-1943 (1975): 440-441, 445-446, 453-454, 470-471, 478; Air Room Interview, Brig. Gen. Laurence S. Kuter, 25 May 1943, Assistant Chief of Air Staff, Intelligence, USAFHRC: 4-5.

<35> Bradley, General's Life: 143.

<36> Howe: 573-574; Bradley, General's Life: 147-148; Tedder: 410-411; Kuter, "Goddammit, Georgie!": 51-56; Patton, Blumenson, ed.: 203-210.

<37> Blumenson: 206.

<38> Bradley, General's Life: 147-148; Blumenson: 206-207.

<39> Blumenson: 207; Howe: 573.

<40> Tedder: 410.

<41> Howe: 573.

<42> Bradley, General's Life: 147-148; Patton, Blumenson, ed.: 206-207, 210.

<43> Omar N. Bradley, A Soldier's Story, (1951): 61-64; Kuter, "Goddammit, Georgie!": 51-56

<44> Kuter, "Goddammit, Georgie!": 51-56

<45> Kuter, "Goddammit, Georgie!": 51-56; Bradley, Soldier's Story: 61-64; Bradley, General's Life: 147-148.

<46> Patton, Blumenson, ed.: 205.

<47> Tedder: 410-411. Examination of II Corps' operations report covering this period yields inconclusive results. For the date in question, 1 April 1943, the report does note "Heavy enemy air attack causing many casualties among troops in EL GUETTAR area." However, the two units, the 1st and 9th (-) Infantry Divisions (IDs), which had elements in the El Guettar area on that date, suffered a total of 269 Killed In Action (KIA) over the entire period of the Operations Report (15 March - 10 April 1943).

19 of the 126 KIA that the 1st ID suffered during the period of the report occurred during one battle on 23 Mar 43 when that unit repulsed a counterattack by two Axis armored divisions. It must also be noted that both the 1st and 9th IDs throughout this time period were engaged in offensive operations and receiving "...heavy hostile fire..." as they dislodged "...a crafty and experienced enemy operating from carefully prepared positions...."

In the course of doing so, the report records, from 2 through 6 April 1943 the 9th ID sustained "...considerable casualties in attacking Hill 369 and failed to reach [its] objective." The report further states that on 6 April the division was "...ordered to withdraw and reorganize under cover of darkness." Given the type of offensive operations against an entrenched enemy these divisions were conducting throughout this entire period and the fact that 7 percent of the total number of KIAs for the period were sustained by only one of the divisions during a defensive action conducted from prepared positions, Tedder's figure seems highly plausible. See "Report of Operations," Hq. II Corps, 10 April 1943, MN-1035, Combined Arms Research Library, Ft. Leavenworth, KS: 1-20.

<48> Howe: 573-574; Tedder: 410-411; Kuter, "Goddammit, Georgie!": 51-56.

<49> Patton, Blumenson, ed.: 207; II Corps: 1-20.

<50> Douglas Southall Freeman, "Introduction" to George S. Patton, War As I Knew It (1981): xiii-xvi.

<51> Tedder: 411.

<52> Tedder: 411.

<53> II Corps: 9.

<54> Tedder: 411.

<55> Bradley, General's Story: 148.

<56> Bradley, General's Story: 148.

<57> Bradley, General's Story: 148.

<58> Interview, Ira M. Beatty, Jr., 3 March 1988, Notes in Author's Personal Files, Ft Leavenworth, KS. (A retired USAF Lt. Col., Beatty was a P-40 pilot with the 33d Ftr Gp during 1943-1944.)

<59> Jackson: 468-470; Williamson Murray, Strategy for Defeat: The Luftwaffe, 1933-1945, (1983): 38-39, 118-120.

<60> Howe: 666.

<61> Tedder: 404-405.

<62> Tedder: 404-405.

CHAPTER 9

FM 100-20: AIRPOWER UNLEASHED

The operations conducted and the success enjoyed by the Allied air forces in the aftermath of the reorganization in North Africa prompted much study and analysis by the AAF. Out of this analysis was to come a new statement of basic airpower doctrine, FM 100-20, Command and Employment of Air Power. Although a revised version of FM 1-5, Employment of Aviation of the Army, published 18 January 1943, had contained the salient points of FM 100-15 as well as some of the tactical lessons learned thus far, it had been effectively overtaken by events before it could be put into practice. <1>

When FM 100-20 was published over the AGF's protest in July 1943, one of the principal objections voiced was that the new manual would render FM 31-35, Aviation in Support of Ground Forces, obsolete without providing the "...completeness and detail necessary to...[serve as]...a substitute."

<2> In point of fact, FM 100-20 did not rescind any publication other than FM 1-5. It did, however, specify that where the contents of other manuals were in conflict, the provisions of FM 100-20 would govern. <3>

The only subjects on which FM 100-20 and FM 31-35 were in conflict were the command relationships between air forces and ground forces and in the final selection of tactical objectives. Regarding command relationships, FM 31-35 had stated:

5. In addition to his duties as commander of support aviation, the air support commander acts as adviser to the ground commander. He normally functions under the army, theater, or task force commander.

6. Aviation units may be designated in support of a major ground force. The control is centralized in an air support commander who assigns the attack missions as the needs of the ground unit(s) develop. When the operation requires, aviation units may be specifically allocated to the support of ground units. When this is done the combat aviation unit receives its support missions from an air support control established at the command post of the supported unit. However, a combat aviation unit may also receive other support missions from the air support commander. Designation of an aviation unit for support of a subordinate ground unit does not imply subordination of that aviation unit to the supported ground unit, nor does it remove the combat aviation unit from the control of the air support commander. It does permit, however, direct cooperation and association between the supporting aviation unit and the supported ground unit and enables the combat aviation to act with greater promptness in meeting requirements of a rapidly changing situation. Aviation units may be attached [emphasis in original] to subordinate ground units. This is exceptional and should be resorted to only when circumstances are such that the air support commander cannot effectively control the aviation assigned to the air support command. <4>

Although the wording was clearly a concession to the sensibilities and the increasing influence and autonomy of the AAF, as has been demonstrated already, the "circumstances" as they pertained in Northwest Africa prior to the reorganization in February 1943 were "...such that the air support commander [could] not effectively control the aviation assigned to the air support command." <5> Moreover, even had the commander of XII ASC been able to do so, any "control" he exercised would have been largely titular. That this should be so was in strict conformity with FM 31-35's guidance on the assignment of objectives and priorities to supporting air forces:

31. The most important target at a particular time will usually be that target which constitutes the most serious threat to the operations of the supported ground force. The final decision as to priority of targets rests with the commander of the supported unit. <6>

Owing in part to their lack of experience, but more significantly to their lack of understanding of the principles governing air warfare, the ground commanders who exercised the real control over their supporting air forces were often wont to misuse it. Gen. Kuter pointedly illustrated this with the following example in a letter to Gen. Arnold:

(1) Air Umbrella. When an offensive to dislodge two battalions from the Faid Pass was being planned, it was estimated that the enemy might assemble 24 StukKas [sic] to dive-bomb our forces. The ground commander insisted that a friendly fighter patrol be kept circling over the battle area during all daylight hours on the two successive days of the operation as a prerequisite to taking offensive action or even to planning to attack. It was explained that our fighter strength and time and distance factors would permit us to maintain only twelve fighters on such a patrol and that that patrol should interfere with but could not prohibit 24 determined StukKas [sic] from delivering an attack. It was clearly explained by the highest air commander in this theater, that the provision of this "umbrella", which itself was of questionable value, would also automatically prohibit using any of the many light bombers at hand against either the StukKas [sic] at their bases or any hostile ground targets and would furthermore prohibit any reconnaissance whatsoever over the defiles through which reserves were expected or through which the enemy might withdraw. The ground commander insisted upon the umbrella thus emasculating all the offensive power and ignoring all the reconnoitering capabilities of the sizeable air force at his disposal for one defensive function of doubtful value. <7>

The uninitiated may be tempted to read the foregoing and observe that the type of umbrella desired by the ground commander in this case was almost precisely what later ground commanders got during operations on the continent after the Normandy invasion. However, on closer examination, it

becomes readily apparent that this was not the case. Radically different circumstances were to pertain later on in Northern Europe.

To begin with, at the time of the above cited incident in Northwest Africa, as has been shown in previous chapters, the Axis air forces held general air superiority. The ground commander in this case wanted a protective bubble placed over his operation. As Kuter pointed out, this type of air operation was extremely resource intensive and, owing to the distances involved and the limited numbers of resources he had available, could interfere with, but not totally stop the expected enemy air attacks. Moreover, this type of air operation stripped his offensive aviation of the fighter protection it needed to go after the enemy air forces where they were most vulnerable, in their own territory and on their own bases. <8>

The alternative Kuter offered, and sought to implement, was to use what offensive power he had to seek the hornets in their nests, so to speak. There, where they were concentrated and most vulnerable, he could destroy them wholesale rather than wait for the swarm to come to him and then try ineffectually to swat them one or two at a time, all the while unable to prevent the infliction of a significant and unacceptable percentage of their vicious stings. <9>

This alternative method was in fact precisely how the Allied air forces dealt with the Luftwaffe prior to, and even after, the invasion of Normandy. The counter air campaign was at the very heart of the Combined Bomber Offensive (CBO) which had been recommended by the Combined Chiefs and approved by the political leadership at the Casablanca conference in January 1943. Operations POINTBLANK and ARGUMENT were initiated to

ensure that air supremacy was achieved over the continent prior to the invasion. <10>

Significantly, when Eisenhower left the Mediterranean Theater and returned to England to prepare for Overlord, he brought with him Lt. Gen. James Doolittle, the officer who had initially commanded 12th AF and, subsequent to the February 1943 reorganization, commanded the NASAf. Eisenhower wanted Doolittle in command of the 8th AF for the purpose of carrying out the counter air campaign. This was significant for two reasons. First, it indicated the type of trust that Eisenhower had come to repose in one of the airmen with whom he had worked in Northwest Africa. This is particularly significant in view of the fact that he felt they had let him down initially. <11> However, of inestimably greater significance was the impact Doolittle was to have on the operations of the VIII FC.

To be sure, the advent of the P-51 Mustang as a long range escort fighter, the development of operationally usable drop tanks for all the fighters used by VIII FC, and the rapidly escalating numbers of fighters were all needed shots in the arm for the 8th Air Force. However, it was the use to which Doolittle put these fighters, and those of the supporting 9th AF (designated for the support of American ground forces but used in this strategic role prior to the landings), that was to have the most far reaching and significant consequences. As close escorts, all these planes had been an integral part of the counter air campaign up to that time. For the first time in operations supporting the CBO, however, and in spite of bitter opposition by bomber commanders, Doolittle unfettered his fighters. Although escort was still to be the major role for his fighters, their tactics were no longer to be so closely circumscribed by directives to remain close

by the bombers at all times. In consonance with Gen. Arnold's New Year's message for 1944, Doolittle granted his fighter commanders wide latitude, exhorting them to "Destroy the Enemy Air Force wherever you find them, in the air, on the ground, and in the factories." <12>

The concerted and coordinated attacks of the strategic bombers on high value aircraft industry and petroleum targets, the attacks of the medium and light bombers on German airfields throughout Northern France, the Low Countries, and Germany, and the attacks of the fighters and fighter-bombers on anything, anywhere, which might be even remotely related to the German Air Force (GAF), not only seriously damaged the Luftwaffe on the ground, but also forced it to come up and defend itself in an environment where the numbers were now overwhelmingly in the Allies' favor. As a result, by D-Day, Eisenhower was able to tell his forces, "If you see fighting aircraft over you, they will be ours." <13> He was 96 percent right. Of the 80 operational Luftwaffe aircraft remaining in Northern France on D-Day, only three FW 190s showed up to contest the landings during the day, while another 22 aircraft engaged in ineffective attacks on shipping that night. <14>

In addition to having removed the GAF as a serious threat before surface operations began on the continent, the AAF's concept of close air support operations there was also totally different. In late 1942 and early 1943, it had been recognized that airborne alerts were wasteful when no opposition was encountered and, in any event, were impractical with the limited numbers of fighters and light bombers available at the time. This had led to the doctrinally correct procedure of maintaining those support forces on ground alert to obtain greater responsiveness when and where

they were needed. <15> Unfortunately, the communications equipment initially available in Northwest Africa resulted, along with the convoluted air support command and control system, in the acute delays and occasional complete lack of close support responsiveness documented by Kent R. Greenfield in his study Army Ground Forces and the Air-Ground Battle Team. <16>

By June of 1944, not only did the Allies enjoy virtual air supremacy, it must also be remembered that aircrew training and aircraft production were in full swing back in the US. The pipelines to the overseas theaters for these commodities were now overflowing. By D-Day there were no fewer than 18 fighter groups and 11 medium and light bombardment groups assigned to 9th AF alone. 9th AF was the tactical air force prescribed by FM 100-20 which was dedicated solely to the support of US Army ground forces in Normandy. In addition to these, 8th AF, FM 100-20's strategic air force, boasted another 15 fighter groups which not only could be, but were used for tactical support as well. Concurrently, under the concept of centralized control of all the airpower in theater coming under a single airman responsive to the needs of the theater commander, all the strategic bombers could be, and at times also were used in a direct tactical support role just as all the fighters had been used earlier in the strategic counter air role. <17> All told, the ratio of close support fighters, fighter-bombers, and light, medium, and heavy bombers to supported ground forces overwhelmingly surpassed what had been available earlier in Northwest Africa or even later on in Sicily and Italy.

This staggering number of planes available for close support enabled air commanders to furnish, on a routine basis, the type of continuous air

cover that ground commanders desired. <18> However, there were still some dramatic differences. Not the least of these differences was the type of equipment used for close support in 1944.

In North Africa, light and medium bombers had been the principle weapons initially used for close air support. However, the low altitude attacks necessary to achieve the type of accuracy needed for truly close support rendered these relatively large and slow planes excessively vulnerable to antiaircraft fire or, as pilots called it, flak. And of course, the more practice the Axis gunners got, the more accurate became the flak. To reduce the vulnerability of these planes, the crews were retrained and the aircraft reequipped with the more sophisticated bombsights needed for medium (8000'-12000') altitude bombing. <19>

This increase in altitude degraded the accuracy obtainable by these planes to a point where they were no longer particularly effective, or even very safe (for the supported ground forces), in the direct close support role. They were, however, to continue to play a crucial role in the isolation of the battlefield, or as this mission is currently identified, interdiction. While some of this interdiction was carried out in areas far removed from the ground battle, most of it was aimed at targets such as troop concentrations, forward supply and ammo dumps, choke points, and other targets which directly affected the outcome of the ground battle in the near term. Because this type of direct support was conducted forward of the "bomb line", an aerial fire control measure beyond which ground troops were not permitted to advance without clearance, the likelihood of amicide was greatly reduced compared to direct close support, which was performed in extremely close proximity to troops in contact. <20>

Fighters and dive bombers had also been used in the close support role in North Africa. Although P-39 Airacobras, P-40 Warhawks, and A-36 (dive-bomber variant) Mustangs had been used as fighter-bombers by both the RAF and AAF in North Africa and Sicily, these aircraft had serious limitations as well. Equipped with relatively underpowered, in-line, liquid-cooled engines, the cooling systems of these aircraft, and hence their power plants, were found to be excessively vulnerable to ground fire. Another important consideration was that none of these aircraft could carry a very large ordnance load or consistently hold their own against first-line German fighters. In the absence of complete air supremacy, these deficiencies could not be overlooked if effective close support was to be consistently delivered. <21>

As a consequence, by the time of the Normandy invasion, a new fighter-bomber, the P-47 Thunderbolt, was the mainstay of 9th AF's close support inventory. This fast, maneuverable machine had originally been designed and built as a high altitude interceptor. As such, it was more than a match for the latest German fighters. However, boasting a huge air-cooled radial engine, eight .50 caliber machine guns, and the ability to carry 2000 pounds of bombs, its speed, rugged construction, and concentrated firepower ideally suited the Jug, as Thunderbolt pilots affectionately called their plane, for the dangerous close support role. <22>

However, despite such obvious differences as the degree of air superiority achieved, and the numbers and types of aircraft available, the fundamental concept of operations was where the most important difference lay between close support operations in Northwest Africa in 1942-43 and those in Northern Europe in 1944-45. Whereas in Northwest Africa ground

commanders had been insistent that support aircraft "stand by," either overhead in continuous defensive patrols or back at their bases on continuous ground alerts, just in case they should be needed, in Normandy and beyond, things worked quite differently. <23>

Admittedly, airborne alerts were still used on occasion in support of major operations in which there was no lack of gainful employment for want of suitable targets. <24> However, the experience of IX TAC, a subordinate element of 9th AF, was far more typical of close support operations in Northern Europe. This organization, under Maj. Gen. Elwood "Pete" Quesada pioneered the Armored Column Cover (ACC) concept which was to play such a crucial role in 3rd Army's dash across France after the St. Lo breakout. <25>

ACC, which was representative of all fighter-bomber close support operations for the remainder of the war, entailed a flight of four aircraft which checked in on VHF radio with the armored column at the start of their assigned time-on-target (TOT) window. The Air Support Party (ASP), an air force control team operating with the column, then assigned a target or targets, if any were available, to the flight leader. If no targets had been identified or nominated by the column commander or his troops, the ASP then assigned the flight leader a geographic area in which his flight was free to hunt for and engage targets of opportunity. Additionally, in the case of a moving column engaged in spearhead operations, the flight of fighters served as the eyes of the column, relaying pertinent information and warning of the presence of enemy forces. <26>

This trust and cooperation between air and ground was only made possible by freeing the supporting aviation from the comforting, yet illogical constraint of remaining tethered within the direct sight of the

supported ground forces. This freed the tactical air forces to exploit their maximum offensive potential which ultimately served the ground forces (as it had previously done for the strategic air forces) far better. <27> This freedom came about only when airmen were allowed to exploit the inherent flexibility of air forces as a coherent entity. <28>

The local air superiority umbrella addressed earlier was but one of a number of the examples Kuter cited on the misuse of airpower owing to its initially faulty organization and control by ground commanders. Kuter had arrived in Algeria in early January 1943 to serve as Spaatz' chief of staff. In this capacity, and later as Deputy Commander of the NATAF, he had witnessed the organizational and doctrinal evolution of the Allied air forces in Northwest Africa. <29> In reporting on this to Arnold in the letter cited earlier, dated 12 May 1943 and titled "Organization of American Air Forces," he summarized:

I. SUMMARY

The organization of the air units in North Africa for the support of ground forces from November 1942 through February 1943 proved to be unsound in battle. During that period the failure to achieve a satisfactory degree of success in fighting in the air, on the ground, and in concert was due to a considerable extent to the unsound air-ground organization and its effect on air support operations. In consequence a sweeping reorientation and reorganization of the air effort was directed. A satisfactory degree of success has resulted. These radical changes should be reflected in the organization of our air forces... <30>

Kuter also noted in his conclusion to this letter that:

4. Conclusion

(a) It is clear that a modern battle is not fought or won by a ground force alone or by a naval force alone. Any modern successful battle consists of a battle in the air which must be won before the surface battle is begun. If the air battle has been won the surface forces are freed from effective hostile air attack and the offensive power of the free air force can be applied directly in support of the surface forces. [Emphasis added.] Modern battles are fought as intensively in the air as they are on the ground. They are combined battles in which the air forces are placed in a supporting role no more often than the ground or naval forces. Each carries out its part of the task to attain the common goal.

This conception cannot be applied if one force is subordinated to another. An air force coordinate with the ground force and the naval force is the only solution by which the three forces can be made to play coordinate roles. <31>

Kuter placed enormous emphasis here on the air superiority role. The importance, in fact the primacy, of this role had been acknowledged in earlier doctrine, most notably FM 100-15. Despite this acknowledgement on an intellectual plane however, it had taken the white hot crucible of combat against a battle-hardened, ruthless, and still powerful Luftwaffe to forge the gut level recognition of the doctrine's missing ingredient. That missing ingredient was that airpower now constituted an element of national strength of such vast importance, in its own right, that the third dimension had become a "battlefield" just as crucial to the success of modern campaigns as the more traditional "battlefields" used by armies and navies.

As was being simultaneously discovered by and about armored forces on the land battlefield, the best, the most effective, weapon for dealing with an air force is another air force. It followed logically then that the control of air forces should rest in the hands of tactical, technical experts. It came as no surprise that Patton and Rommel, with their hard won tactical and technical competence, should wield armored forces as battle instruments with a virtuosity unparalleled by those untutored in that art. What was

needed by the Spaatzes, Doolittles, and Quesadas was recognition that, as masters in their own medium, they could not conduct the symphony without the baton. Kuter's aim was to ensure that air leaders were handed that baton.

In his recommendations to the Chief, as Arnold was known in Air Corps circles, Kuter advocated that Arnold take certain immediate actions which he "...believed to be within the province of the Commanding General, Army Air Forces...." Principal among these:

III. RECOMMENDATIONS.

1. Doctrine. Rewrite the War Department publications to delete all references to the supporting role of aviation and to stress the coordinate role of air, land and sea forces. The operations of each force to be controlled by an expert in the furtherance of the common mission assigned by highest authority. This does not conflict with the principle of unity of command.
<32>

When Kuter departed the Mediterranean theater following von Arnim's surrender in Tunisia, he returned to the US in late May 1943 to rejoin the Air Staff as one of Arnold's Key advisers. <33> At Gen. Marshall's direction, Kuter made, as Greenfield described it, a "...glowing report to AAF and AGF officers at the Pentagon on 25 May 1943..." concerning the organization of the Northwest African Theater. <34>

Having been in more or less constant communication with other AAF officers as well as Kuter in North Africa, the chief of the AAF evidently required no further prompting. Arnold, as the Air Force's official history of World War II phrases it, "...saw to it that the new doctrine [FM 100-20] went 'full ball' through the War Department." <35> Kuter, a Marshall

protege, had the coordinating draft approved by the Adjutant General on 30 June 1943. The finished manual was then "...approved by General Marshall without any hesitation..." and published under his signature three weeks later on 21 July 1943. <36>

As has been illustrated in previous chapters, almost everything contained in FM 100-20 had already appeared in previously published manuals. The one truly unique feature the manual did contain was a concept so revolutionary it was highly unlikely, if buried somewhere in the text of another obscure air force field manual, that it would be accepted as anything but more posturing by the "incorrigible publicity-seekers" in the AAF. It must have seemed to its authors, a War Department-appointed board consisting of one Armored Force and two Air Corps officers, that an equally revolutionary method was necessary to show commanders in the field that the Chief of Staff meant business. <37>

That they succeeded is made quite clear by the manner in which the Chief of the Historical Section, AGF, Lt. Col. Kent R. Greenfield, described FM 100-20's impact on air-ground cooperation in a study he wrote in 1944-45. When this study was published with only minor revision in 1948, Dr. Greenfield described the manual as, "...departing from the matter-of-fact tone normal in Army Field Service Regulations." <38> Indeed it had. Its introductory paragraphs proudly and defiantly declared in upper-case, bold faced type:

1. RELATIONSHIP OF FORCES.--LAND POWER AND AIR POWER ARE CO-EQUAL AND INTERDEPENDENT FORCES; NEITHER IS AN AUXILIARY OF THE OTHER.

2. DOCTRINE OF EMPLOYMENT.--THE GAINING OF AIR SUPERIORITY IS THE FIRST REQUIREMENT FOR THE SUCCESS

OF ANY MAJOR LAND OPERATION. AIR FORCES MAY BE PROPERLY AND PROFITABLY EMPLOYED AGAINST ENEMY SEA POWER, LAND POWER, AND AIR POWER. HOWEVER, LAND FORCES OPERATING WITHOUT AIR SUPERIORITY MUST TAKE SUCH EXTENSIVE SECURITY MEASURES AGAINST AIR ATTACK THAT THEIR MOBILITY AND ABILITY TO DEFEAT THE ENEMY LAND FORCES ARE GREATLY REDUCED. THEREFORE, AIR FORCES MUST BE EMPLOYED PRIMARILY AGAINST THE ENEMY'S AIR FORCES UNTIL AIR SUPERIORITY IS OBTAINED. [Emphasis added.] IN THIS WAY ONLY CAN DESTRUCTIVE AND DEMORALIZING AIR ATTACKS AGAINST LAND FORCES BE MINIMIZED AND THE INHERENT MOBILITY OF MODERN LAND AND AIR FORCES BE EXPLOITED TO THE FULLEST.

3. COMMAND OF AIR POWER.--THE INHERENT FLEXIBILITY OF AIR POWER IS ITS GREATEST ASSET. THIS FLEXIBILITY MAKES IT POSSIBLE TO EMPLOY THE WHOLE WEIGHT OF THE AVAILABLE AIRPOWER AGAINST SELECTED AREAS IN TURN; SUCH CONCENTRATED USE OF THE AIR STRIKING FORCE IS A BATTLE WINNING FACTOR OF THE FIRST IMPORTANCE. CONTROL OF AVAILABLE AIR POWER MUST BE CENTRALIZED AND COMMAND MUST BE EXERCISED THROUGH THE AIR FORCE COMMANDER IF THIS INHERENT FLEXIBILITY AND ABILITY TO DELIVER A DECISIVE BLOW ARE TO BE FULLY EXPLOITED. THEREFORE, THE COMMAND OF AIR AND GROUND FORCES IN A THEATER OF OPERATIONS WILL BE VESTED IN THE SUPERIOR COMMANDER CHARGED WITH THE ACTUAL CONDUCT OF OPERATIONS IN THE THEATER, WHO WILL EXERCISE COMMAND OF AIR FORCES THROUGH THE AIR FORCE COMMANDER AND COMMAND OF THE GROUND FORCES THROUGH THE GROUND FORCE COMMANDER. THE SUPERIOR COMMANDER WILL NOT ATTACH ARMY AIR FORCES TO UNITS OF THE GROUND FORCES UNDER HIS COMMAND EXCEPT WHEN SUCH GROUND FORCE UNITS ARE OPERATING INDEPENDENTLY OR ARE ISOLATED BY DISTANCE OR LACK OF COMMUNICATION.

<39>

This was indeed a profound departure from standard War Department doctrinal fare. For the first time in air doctrine, this manual stated unequivocally that airpower's *raison d'être* was, in fact, control of the third dimension. All other tasks then followed from this primary one.

Like the proverbial Missouri mule whose interest has been gained through the use of a two-by-four attention step, AGF officers were naturally inclined to be somewhat offended. However, despite their

protests to the contrary, nothing contained in FM 31-35 which specified the actual mechanics of the air-ground coordination process had been changed by anything contained in FM 100-20. In fact, FM 100-20 noted that "...communication procedure essential to air force operations is contained in FM 31-35." <40>

Both FM 100-20 and FM 31-35 did indeed lack many of the technical details necessary for the actual tactical interface of air and ground forces. However, it is difficult to see, especially in view of the fact that the AGF did not amend or revise FM 31-35 until 13 August 1946, how withholding publication of FM 100-20 could have solved the problems caused by the absence of those details. <41>

As with most tactical procedures, these details could only really be worked out by forces in the field who were in a position to see what actually worked under conditions of combat. Peacetime maneuvers and training exercises definitely are a much less costly means of learning lessons than combat. However, the opinions of some notably partisan observers notwithstanding, maneuvers can approximate, but can never faithfully reproduce nor substitute for the experience gained in an activity in which warriors interact with opposing warriors in the risking and taking of one another's lives. <42> In spite of the regrettable lack of detail in both publications, FM 31-35 did provide the solid foundation upon which US Army air-ground cooperation was based not only in Northwest Africa, but throughout the rest of the war. <43>

FM 100-20, on the other hand, established, once and for all (at least during World War II), the conceptual framework within which the unity of command necessary for the effective employment of airpower could be

achieved. This unity of command was vital for airpower to perform as a theater-level weapon. As was discovered in Northwest Africa, employment of air forces as an indivisible entity, with the resultant broad flexibility that entity granted the theater commander, was also essential for enabling the air forces to accomplish their missions. This was true whether those missions were in direct support of local tactical aims, or indirect support of theater, or even global, operational and/or strategic objectives. Moreover, in assigning definite objectives to air force missions, and further, in explaining why those missions had to be accomplished in the order listed as a step by step process, FM 100-20 went a great deal farther than any of its predecessors in attempting to educate both air and ground commanders and to liberate them from the bondage of outmoded employment philosophies.

CHAPTER 9 NOTES

<1> US Army Air Forces, FM 1-5, Army Air Forces Field Manual -- Employment of Aviation of the Army (1943).

<2> Kent R. Greenfield, Army Ground Forces and the Air-Ground Battle Team, Including Organic Light Aviation, Army Ground Forces Study No. 35, (1948): 47

<3> US Army, FM 100-20, Field Service Regulations -- Command and Employment of Air Power (1943): 1.

<4> US Army, FM 31-35, Basic Field Manual -- Aviation in Support of Ground Forces (1942): 3.

<5> Wesley F. Craven and James L. Cate, eds., Europe: TORCH to POINTBLANK, August 1942 to December 1943 (The Army Air Forces in World War II) (7 vols., 1948-1958) 2: 50-66, 106-115.

<6> FM 31-35 (1942): 11.

<7> Letter, Kuter to Commanding General, Army Air Forces, 12 May 1943, 614.201-1, US Air Force Historical Research Center, Maxwell AFB, AL: II.1.b.(1). (Cited hereafter as USAFHRC.)

<8> Kuter to CG, AAF, 12 May 43, USAFHRC: II.1.b.(1).

<9> Kuter to CG, AAF, 12 May 43, USAFHRC: II.1.b.(1).

<10> Craven and Cate 2: 304-305, 668-681; Wesley F. Craven and James L. Cate, eds., Europe: ARGUMENT to V-E Day (The Army Air Forces in World War II) (7 vols., 1948-1958) 3: 8-13.

<11> Dwight D. Eisenhower, "Report on Operation TORCH and the Tunisian Campaign," Joint Operations Review Board, Army and Navy Staff College, Undated, N-7290B, Combined Arms Research Library, Ft. Leavenworth, KS: 51. (Cited hereafter as CARL.)

<12> Craven and Cate 3: 8-13; Edward Jablonski, America in the Air War (The Epic of Flight) (1982): 100-105, 121-126.

<13> Craven and Cate 2: 58.

<14> Craven and Cate 2: 58; Jablonski: 126.

<15> FM 31-35 (1942): 15-16.

<16> FM 31-35 (1942): 1-2, 4, 12-16; Greenfield: 45-50.

<17> Craven and Cate 3: 111-113; FM 100-20 (1943): 4.

<18> Jablonski: 126-130, 134-135.

<19> Kuter to CG, AAF, 12 May 43, USAFHRC: II.1.c.(3). Interestingly enough, the A-20 and its successor, the A-26, were comparable in size and only slightly slower than the current A-10 close air support aircraft which also relies on low altitude and slow speed for weapons delivery accuracy. Fortunately for the crews of all but one of these three planes, they were conceived, designed, and flown, for the most part, in an era before the advent of radar directed light and medium, rapid fire antiaircraft artillery (AAA) -- not to mention high speed, low altitude capable surface to air missiles (SAMs).

<20> Wesley F. Craven and James L. Cate, eds., Men and Planes (The Army Air Forces in World War II) (7 vols., 1948-1958) 6: 198.

<21> Craven and Cate 6: 198, 211-214. The uninitiated might point out that in the Korean War, Mustangs, by then redesignated F-51s, were the most effective and most accurate of the USAF planes involved in close support work. This is true. However, it is also true that: (1) There were literally thousands of Mustangs left over from World War II; (2) there was no shortage of trained pilots who could be recalled to active duty to fly them in the Korean conflict, and; (3) despite their accuracy and loiter time, which was admittedly far superior to that of the first generation of jet fighter-bombers then in use, the Mustangs were still extremely vulnerable in the low altitude, dense ground fire environment. They suffered appalling losses in this regime and were eventually withdrawn from combat in Korea altogether as a consequence. See Robert F. Futrell, The United States Air Force in Korea (Revised Edition) (1983): 336, 390-391.

<22> Craven and Cate 6: 215-217. It must also be remembered that by June 1944 the Germans had developed a number of highly effective light automatic antiaircraft weapons. German anti-aircraft gunners had also gotten lots of practice by this time. Employment of the A-36 Mustang in the high threat environment of Northern Europe, in all probability, would have served only to squander aircraft and pilots while doing little to ensure effective close support for the ground forces. It is highly significant to bear this in mind because the A-36 had been developed specifically to answer the ground forces' demands for a close support dive bomber in the vein of the German plane, the JU-87 Stuka, with which the soldiers were so enthralled.

In its P-51 fighter variant, the Mustang proved to be the best and most effective fighter aircraft of the war. The P-47, however, which was developed specifically for the high altitude pursuit role, did not receive its air cooled engine because of its suitability for either high or low altitude flight. Ironically, the Thunderbolt, originally designed as a high altitude interceptor with a liquid cooled engine, which aeronautical engineers felt to be the better all-around engine, was modified and equipped with its air

cooled engine as the result of a production decision made to ease the strain on the manufacturers of liquid cooled engines. In view of that fact, and lacking the data on survivability which could only be derived from combat experience, it is highly doubtful, even had the prevailing doctrine supported it, whether any high performance ground attack aircraft developed in peacetime would have been equipped with an air cooled engine. See Craven and Cate 6: 198-199, 215-220.

Gen. Quesada, Commander of the IX Fighter Command (FC) at the time the high-performance P-51 version of the Mustang was introduced to the ETO in quantity (late 1943-early 1944), reveals, incidentally, that the Mustang was originally intended to equip his tactical forces, while the Thunderbolt, reequipped with long-range droppable gas tanks was to continue with VIII FC in the fighter escort role. Recognizing the Mustang for the superlative air-to-air machine it was, and realizing that his forces would have little need for such a plane, Quesada traded his Mustangs to Brig. Gen. William Kepner, VIII FC Commander, who had the greatest need for them.

Thus, the placement of the Thunderbolt into the role for which it was ideally suited was not by design but was rather the serendipitous side effect of a decision made to aid in the absolutely crucial struggle for air superiority. One can only speculate what might have been the ultimate outcome, both for the air superiority and the direct air support campaigns, had Quesada been unable to see the "big picture" and, as a consequence, jealously guarded his prerogative to keep the new, "better" planes for his command. See Richard H. Kohn and Joseph P. Harahan, eds., Air Superiority in World War II and Korea (1983): 47-49.

<23> Kuter to CG, AAF, 12 May 43, USAFHRC: II.1.b.(1), II.1.b.(5), II.1.c.(1), II.3.(b).

<24> Craven and Cate 3: 264.

<25> Craven and Cate 3: 238-243.

<26> Craven and Cate 3: 238-243; David T. Griggs to Edward L. Bowles, 7 August 1944, 168.7012, 34162-34174, Box 1, Kuter Papers, USAFHRC: 1-3.

<27> Craven and Cate 3: 238-243. See also Note <12> above.

<28> US Air Force, AFM 1-1, Basic Aerospace Doctrine of the United States Air Force (1984): A2-A3.

<29> Puryear, Stars in Flight (1981): 94.

<30> Kuter to CG, AAF, 12 May 43, USAFHRC: I.

<31> Kuter to CG, AAF, 12 May 43, USAFHRC: II.4.(a).

<32> Kuter to CG, AAF, 12 May 43, USAFHRC: III.1.

- <33> Puryear: 36-37; Kohn: 36.
- <34> Greenfield: 48.
- <35> Craven and Cate 2: 205.
- <36> FM 100-20 (1943): ii, 1; Pogue, Ordeal and Hope, 1939-1942 (George C. Marshall) (4 vols., 1963-1987) 2: 85-86, 291, 294; Interview K239.0512-810, Gen. Laurence S. Kuter, 7-10 October 1974, USAFHRC: 312, 326-328.
- <37> Robert F. Futrell, Ideas, Concepts, Doctrine: A History of Basic Thinking in the United States Air Force, 1907-1964 (1974): 69.
- <38> Greenfield: ii, 47-51.
- <39> FM 100-20 (1943): 1-2.
- <40> FM 100-20 (1943): 3.
- <41> US Army, FM 31-35, War Department Field Manual -- Air Ground Operations (1946): 1.
- <42> Christopher R. Gabel, "The U.S. Army GHQ Maneuvers of 1941," (PhD Dissertation, Ohio State University, 1981): 327-328. Martin Blumenson, Kasserine Pass (1967): 303.
- <43> Greenfield: 47; Philips Melville et al, Air Operations in Support of Ground Forces in Northwest Africa (15 March - 5 April 1943), 8th AF Observer's Report, HQ VIII ASC Observer's Report, Annex 1, 1 July 1943, 532.4501, USAFHRC: 37-38; Paul L. Williams, "Report on Operations (13 January 1943 - 9 April 1943)," HQ XII Air Support Command, 9 April 1943, N-6046, CARL: 22-24. (This report is contained as Inclosure 6 to: Spaatz to Commandant, US Army Command and General Staff College, N-6046, CARL.)

CHAPTER 10

SUMMARY

FM 100-20 was written in response to lessons learned in the North African campaigns of World War II. It evolved as a result of doctrinal maturity gained through combat experience and a genuine desire to win the war as quickly and efficiently as possible. The only really new concept the manual contained was that airpower should be considered a co-equal and interdependent (not independent) element of the total military power at the theater commander's disposal. As such, the manual continued, all of those elements should be controlled by the theater commander through tactical and technical experts. Land power was to be commanded by a land component commander while airpower was to be commanded by an air component commander.

The idea of centralized control over airpower was not new. What was new, however, was that airmen should have much of a say in the matter, and that they were to be granted the necessary authority to prevent their tactical and technical concerns from being ignored and subordinated to the whims of local ground commanders. While this had already been acknowledged to some extent regarding the strategic exercise of airpower beyond the sphere of influence of land forces, its application to the tactical application of airpower in support of land forces was something extraordinary. What it meant was that air leaders at all levels would now

be granted the same latitude and authority which was already enjoyed by ground commanders in determining and carrying out the essential and implied tasks necessary to execute their assigned missions.

FM 100-15, Larger Units, published more than a year prior to FM 100-20, had given theater commanders and their immediate subordinates broad strategic and operational level guidance concerning campaigns and the essential tasks inherent to such undertakings. It had been unequivocal about the necessity of achieving air superiority as a prerequisite for the success of any operation. In that sense then, the achievement of air superiority was not just an implied, or even an essential, task. Well before FM 100-20's release, the achievement of air superiority was a doctrinally specified task. However, until FM 100-20 granted airmen at the tactical level the necessary authority to do so, the steps required to gain air superiority were consistently vetoed by subordinate ground commanders as being outside the realm of their immediate interests.

Chapter one of this study pointed out that United States surface forces have not fought a battle during which they have been prohibitively interfered with by a hostile air force for more than 45 years. It must also be pointed out, however, that neither has the US Air Force faced a quantitative nor qualitative equal in unlimited combat since World War II. This legacy of air supremacy, whether fought for and won, as in Korea, or simply never challenged, as was the case in South Vietnam, has allowed the US, and, sadly, the US Air Force as well, to disregard some of the most salient points of the doctrine set forth in FM 100-20. <1>

The first crucial tenet of this doctrine was that land forces and air forces were equal partners in a cooperative venture. Were one to be

subordinated to the other, the full synergism arising from the combined efforts of the two could not be achieved. Each partner was capable of making its own unique contributions to campaigns. Air forces could not take or hold ground. Land forces, on the other hand, could not strike directly at the sources of the enemy's war making potential. Neither, at the tactical level of war, could ground forces do a great deal to seize the initiative from the enemy air forces.

The second crucial tenet of the doctrine established in FM 100-20 was that without having first established dominance in the air battle, air forces could do little of significance to aid ground forces in the surface battle. Indeed, without establishing at least local dominance in the air battle, air forces could not even conduct, without prohibitive losses, any of the so-called "independent" air campaigns.

Fortunately, the Air Force has not yet completely retreated from this concept. However, some alarming trends of thought have become evident in recent years. The idea, prevalent among Army officers and even some Air Force officers, that local air superiority or only air parity might be sufficient seems to indicate that once again the expense, value, and necessity of gaining theater air dominance is being seriously questioned. Viewed in the context of the historical precedents, this is particularly disturbing because it is so reminiscent of Army and Air Corps attitudes immediately preceding World War II. This type of thinking has sobering implications for any all-out fight with a modern, well equipped air force. As in World War II, the outcome of such a conflict will depend in large measure on the success of the Air Force in support of the overall global and theater campaigns. The crucial difference between World War II and any

future conflict however, will be an industrial and manpower base no longer capable of supporting a slow learning curve.

The third crucial tenet of the airpower doctrine set forth in FM 100-20 was that air forces should be centrally controlled by airmen. Only through such command and control could the tactical and technical concerns of the subordinate air commanders be truly appreciated and, when valid, heeded. Only thus could the full measure of the flexibility of the airpower throughout a theater be exploited to the maximum extent, regardless of the objectives. When the authority to shift and focus the full weight of the available airpower in a theater onto one target or target system rested with a single senior airman, the coordination necessary to do so rapidly and effectively was vastly simplified and expedited. This helped alleviate one of the greatest causes of the Clausewitzian concept of "friction" in warfare: the inherent difficulty of synchronization of combat power in the absence of a unified command. <2>

The necessity for centralizing control over airpower at the theater level had been recognized prior to FM 100-20's publication. Gen. Spaatz had pointed out nearly two years before US forces entered combat in Northwest Africa that a numerically inferior RAF had already demonstrated the value of "...a unified command which centralizes control of all military air matters under an air high command concerned solely with air matters." <3>

This centralization had in fact been directed by War Department sanctioned doctrine previous to FM 100-20. A variety of factors, however, conspired against this centralized control and the concomitant unity of command over air forces in Northwest Africa. Not the least among these factors was the inability or unwillingness of AAF leaders there to deal with

the perceptually insurmountable problems of command and control over widely scattered forces with poor communications.

The solution they adopted was to decentralize control over the tactical air support forces as FM 31-35 had allowed under such circumstances. It is debatable whether this decentralization was the result of simple inexperience or whether it was born of a deeply rooted conviction that the purely tactical support air forces could not possibly make any decisive contribution to the theater battle and would therefore not suffer from any lack of unity of effort. However, whatever the motivation behind the deliberate fragmentation and forfeiture of unified command, it did not take the theater commander long to recognize that there was something seriously flawed in the organization, command, and control of his air forces.

Not debatable, however, is the fact that despite their numerical superiority, Allied air forces in Northwest Africa were unable to dominate either the air battle or the surface battle until they were brought under a unified command. In view of some of the recent initiatives proposed to decentralize control of tactical air forces in an effort to cope with Clausewitz's "fog and friction of war" in an increasingly lethal and sophisticated combat environment, a re-examination of the real lessons of Northwest Africa may well be in order.

One of the lessons was that combined arms doctrine for warfare at the theater level was absolutely essential. FM 100-15, Larger Units, was, in most regards, an outstanding example of air-land doctrine for the operational and strategic levels of war. However, its lack of any clear-cut definition for, or suggested methodologies for the achievement of, local air superiority, failed to eliminate the widespread misconceptions about this

concept. Viewing this omission as a "minor" flaw which would not have proved ultimately fatal, however, implies that the "major" flaw the manual contained would have proved fatal. That major flaw, of course, was the failure to state explicitly that airpower, because it could perform tactical, operational, and strategic missions beyond the sphere of influence of surface forces, was a coordinate and coequal element of national military power along with land power and seapower.

That this flaw would have proved fatal is difficult, if not impossible, to establish. Indeed, there are those even today who would still argue that it was not a flaw at all. That the flaw was recognized as such, however, and corrected at all, much less as early as it was, was due more perhaps to the wisdom, foresight, and character of two soldiers than to the parochial opportunism and political acumen of any number of "overpaid, overpromoted, overdecorated, and incorrigible publicity-seekers." <4>

Had not Gen. Eisenhower recognized, or at least approved and forwarded the recommendation for reorganization to the Combined Chiefs of Staff, it is quite possible that the initial difficulties encountered in Tunisia might have been resolved anyway. Had Eisenhower chosen instead to wage attrition warfare in Northwest Africa, the steadily increasing capacity of America's industrial might and manpower reserve, which continued to supply planes and pilots at an accelerating rate, may very well have solved his air problem for him. In part, just such an approach to this problem worked for the Soviets.

Interestingly, the Soviet approach was an air force organized, trained, and equipped along purely tactical, ground support lines. Control over these forces was decentralized and totally subordinated to the needs and demands

of local ground commanders. The staggering expense of such an approach was supported by overwhelming numerical and material superiority. That superiority was, in turn, based on vast quantities of lend-lease materiel and the Soviets' own fully mobilized and prodigious industrial base which, once relocated beyond the Urals, remained unmolested there by a Luftwaffe technically and strategically incapable of attacking it. It is also worthy of note that although they began to enjoy this numerical superiority from 1942 on, the Soviets made little strategic headway offensively until late 1943 when the Luftwaffe was overwhelmingly preoccupied with the strategic problem of the air defense of the fatherland against the Combined Bomber Offensive as well as countering the rapidly expanding Allied air supremacy in the Mediterranean theater. <5>

Fortunately, Eisenhower's reorganization of his air forces allowed the Western Allies' to solve the problem of achieving air superiority well before the fruits of the United States' overwhelming industrial might began to reach the theater in sufficient quantity to do so using an attrition strategy. This in itself bears mute testimony to Eisenhower's wisdom. Had not the reorganization taken place and Coningham's Western Desert doctrine adopted, the virtually complete mastery of the air which permitted such decisive results in Tunisia would almost certainly not have been attained. If airpower had not been permitted to contribute the full measure of its effectiveness as an equal partner in the business of AirLand warfare, FM 100-20 might never have had sufficient impetus to be written.

Even in the event that it had been written, without the courage, vision, and faith of Gen. Marshall to approve it, in spite of vehement opposition by the AGF, it is not entirely unlikely that a significant portion of the USAF

would still be the USAAF. It is exactly that portion, the tactical air forces, which, in concert with their strategic brethren as an indivisible, centrally controlled entity, made Allied air supremacy a reality in World War II. No one can seriously contest that air supremacy was an indispensable ingredient to the Allies' combined arms victory. No thoughtful student of the strategic lessons of World War II should contest that the combined arms concept worked best when applied across the board at all levels of war, and not just at the tactical or operational levels. <6>

If its publication had caused alarm and ill will, FM 100-20, had definitely, once and for all, crystalized and firmly established in manifestly bold and unmistakably positive terms, those principles which combat experience in North Africa reverified were essential to the effective prosecution of the war. In that regard, FM 100-20 established the solid foundation upon which effective airpower is built. It also provided the roof under which all other air missions can be affordably conducted. That roof comprised the recognition that an air force's first, and most important job is to defeat the enemy air force and establish air superiority. Until the foundation and roof were provided by FM 100-20, the close support walls earlier devised by FM 31-35 proved to have been built on sandy soil perpetually eroded by a hard rain of enemy bombs. Once those walls were adequately protected, the now completed airpower structure provided truly effective support for the ground forces and cleared the way from the beaches of France to the heart of the Reich. <7>

CHAPTER 10 NOTES

<1> William W. Momyer, Air Power in Three Wars (1978): 39, 65, 107-108.

<2> Carl von Clausewitz, On War (Indexed Edition, Edited and Translated by Michael Howard and Peter Paret) (1984): 119-121, 295-296.

<3> Robert F. Futrell, Ideas, Concepts, Doctrine: A History of Basic Thinking in the United States Air Force, 1907-1964 (1974): 56.

<4> John J. Sullivan, "The Botched Air Support of Operation Cobra," Parameters 18 (March 1988): 97-110.

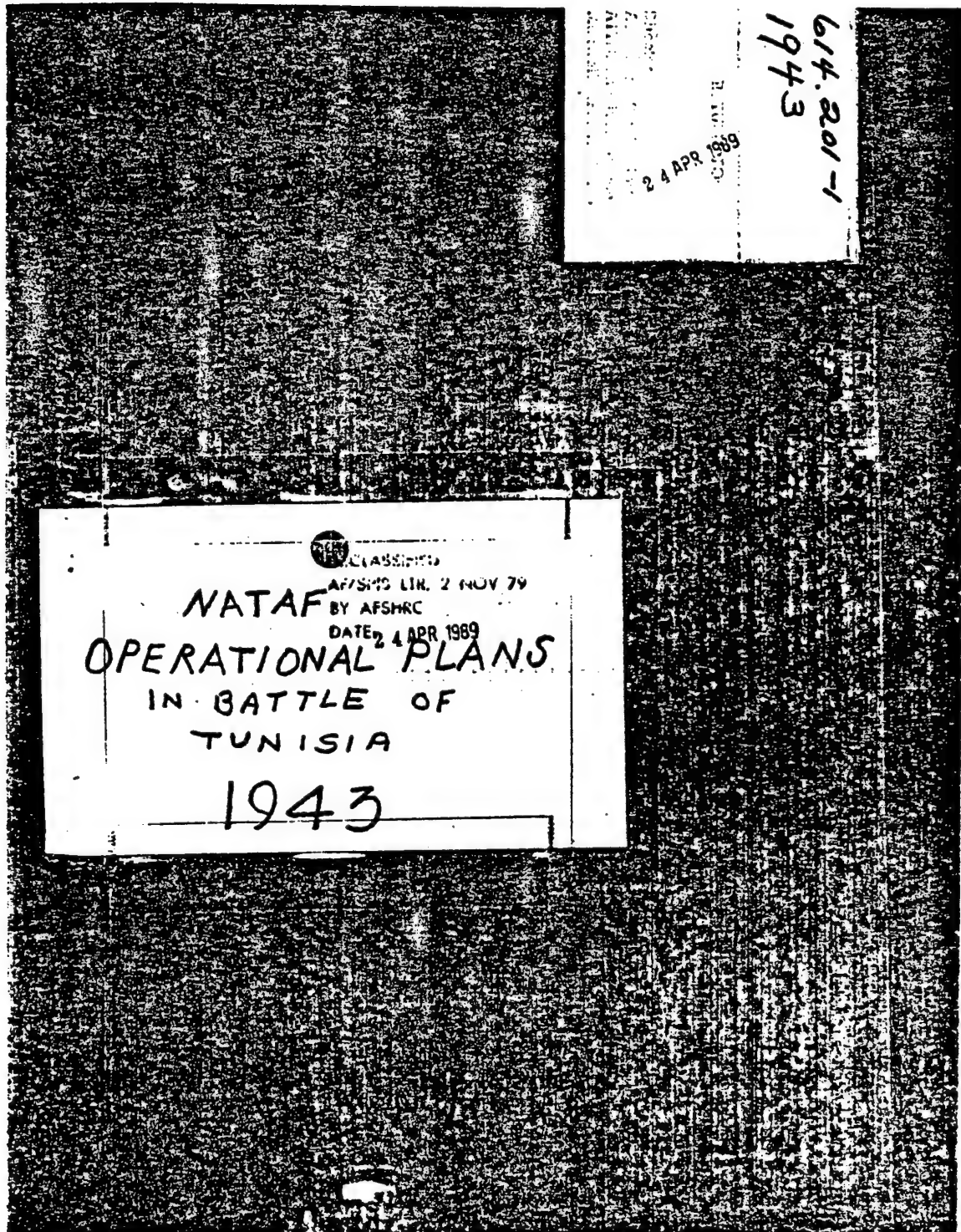
<5> Richard J. Overy, The Air War, 1939-1945 (1981): 47-60.

<6> Williamson Murray, Strategy for Defeat: The Luftwaffe, 1933-1945 (1983): xxi, 291-292, 299-303, 312, 316-319; Overy: 203-205.

<7> US Air Force, AFM 1-1, Basic Aerospace Doctrine of the United States Air Force (1984): 2-11 - 2-13, A-2 - A-3; US Army, FM 100-5, Operations (1986): 25.

APPENDICES

APPENDIX 1



[REDACTED]

NORTHWEST AFRICAN TACTICAL AIR FORCE HEADQUARTERS

May 12, 1943.

SUBJECT: Organization of American Air Forces.

TO : Commanding General, Army Air Forces, Washington, D. C.
(Through Channels)

I. SUMMARY

The organization of the air units in North Africa for the support of ground forces from November 1942 through February 1943 proved to be unsound in battle. During that period the failure to achieve a satisfactory degree of success in fighting in the air, on the ground, and in concert was due to a considerable extent to the unsound air-ground organization and its effect on air support operations. In consequence a sweeping reorientation and reorganization of the air effort was directed. A satisfactory degree of success in battle by both air and ground forces has resulted. These radical changes should be reflected in the organization of our air forces, and particularly in the training and equipment of additional air units, and of replacements without delay.

Briefly the recommended immediate action which is believed to be within the province of the Commanding General, Army Air Forces consist of the following: to initiate the inactivation of all Air Support Commands and the formation of select tactical and strategic reconnaissance squadrons with special equipment high performance aircraft and special training for exclusive service to the ground forces; to direct the revision of all army airforce publications to delete the statement, inference or implication that any air force unit except reconnaissance squadrons can normally be expected to operate under the legal command or practical control of any surface force commander excepting only the supreme commander who conducts the whole campaign; and initiate a review of present overall air force organization wherein the present (numbered) air forces, and their compartmented Bomber, Fighter, and Air Support Commands will be replaced by (task) Air Forces to consist of the Air Divisions, Commands, Wings, and Groups as necessary to accomplish the Air Force's specific job.

II. DISCUSSION

1. Unsuccessful Situation, November 1942 to February 1943.

a. Organization. 242 Group, R.A.F. equipped with fighters (Spitfires), fighter-bombers (Hurribombers), night-fighters (Beaufighters) and night-bombers (Bisleys) was stationed with and was ordered to support the 1st Army initially and was subsequently similarly employed with V Corps. XII Air Support Command with fighters (P-40s, P-39s and Spitfires), light bombers (A-20s) and a ground strafing observation unit (P-39s) was attached to II Corps. Late in January the Headquarters Allied Air Support Command was placed in control of 242 Group

and XII Air Support Command. It was stationed with Headquarters, First Army and was directed to support First Army. Thus throughout this period, the current American concept of Support Aviation was in vogue and there were large numbers and several types of aircraft under the virtual command of ground commanders down to include Corps Commanders.

b. Concept and Employment, General. During this period the allies had more aircraft than the axis. However the superior air power inherent in our greater numerical advantage was never developed nor employed. The fact has never been more clearly illustrated that greater numbers of aircraft than the enemy possesses do not automatically confer any advantage unless those greater numbers are organized under proper air forces command. The question "who is containing whom?" was most embarrassing during this period. The overall effect of the unsound organization and operational concept of our air effort was graphically illustrated by the fact that the enemy was permitted to move, in lightly escorted and unarmed transports, as many as one thousand men per day from Italy and Sicily to airdromes in Tunisia which were only 80 miles distant from our own air bases. By air and by sea the enemy transported about 150,000 men with their armor and equipment, and supported and then maintained them almost wholly from airdromes and seaports within the range of our supporting air forces.

During this period a sizeable number of combat units were at all times assigned to 242 Group, and XII Air Support Command, and were employed in direct support roles to the neglect of the proper offensive task of obtaining air superiority and thus assisting the theatre task as a whole. This in spite of the doctrine set forth in Paragraph 2b FM 31-35 that states that other types (than observation) are assigned or attached to Air Support Commands "as the situation requires." Each ground commander naturally and properly viewed the ground (and air) operations on his immediate front as of paramount importance and insisted that his air support forces be employed almost exclusively on his front. Each commander agreed that superiority in the air was necessary, but that the air war which could gain that superiority should be fought by someone else's air force. In contrast the axis air forces were moved freely up and down the front and were ordinarily able to strike in force against only such opposition as our local air units could muster. From the viewpoint of the ground commander, the condition was habitually too precarious on his immediate front to permit "the diversion of the air units allocated to support his ground forces from their direct support tasks to distant air force missions."

The foregoing broad statements are supported by the general course of the campaign during this period which terminated with the abandonment of Gafsa, evacuation of the Thelepte and Sbeitla air base areas and with the 10th and 31st Panzer Divisions moving on Tebessa and Le Kef through the Kasserine gateway. These broad statements are supported in specific detail by numerous incidents in the official records of which the following are selected as most striking:

(1) Air Umbrella. When an offensive to dislodge two battalions from the Faid Pass was being planned, it was estimated that the enemy might assemble 24 Stukas to dive-bomb our forces. The ground commander insisted that a friendly fighter patrol be kept circling over the battle area during all daylight hours on the two successive days of the operations as a prerequisite to taking offensive action or even to planning to attack. It was explained that our fighter strength

and time and distance factors would permit us to maintain only twelve fighters on such a patrol and that that patrol should interfere with but could not prohibit 24 determined Stukkas from delivering an attack. It was clearly explained by the highest air commander in this theatre, that the provision of this "umbrella" which itself was of questionable value, would also automatically prohibit using any of the many light bombers at hand against either the Stukkas at their bases or any hostile ground targets and would furthermore prohibit any reconnaissance whatsoever over the defiles through which reserves were expected or through which the enemy might withdraw. The ground commander insisted upon the umbrella thus emasculating all the offensive power and ignoring all of the reconnoitering capabilities of the sizeable airforce at his disposal for one defensive function of doubtful value.

(2) Ground Commanders' evaluation of strategic value of air bases.

When Rommel was East of Tripoli, the Thelapte air bases permitted operations by short-range aircraft deep into the hostile rear. This strategic or tactical advantage was repeatedly stressed by the air men. Nevertheless, through February 1943, the ground forces were deployed with their main strength in the defensively strong natural terrain in the far North from Medjes-el-Bab to Djebel Bargou and Gafsa and the Thelapte air bases were surrendered.

(3) Misuse of aviation equipment. At a time when the air-borne interception equipment in the Beaufighter airplane was in the most secret category, a number of Beaufighters were assigned to XII Air Support Command to permit operations against night intruders over the air bases and ground installations within II Corps area. Orders through air channels prohibited the use of Beaufighters over hostile territory. The Corps Commander directed that the Beaufighters be employed over hostile territory in front of II Corps. The air commander informed the ground commander of the prohibition against such employment. The ground commander stated that it was his function to give orders, not to receive them, and regardless of air channel instructions he ordered the Beaufighters to take off. The Beaufighters took off. This action obviously prejudiced the effectiveness of allied night interception all over the world for very limited advantages in a local situation of no world wide importance.

(4) Misuse of air units. The Bisley light bomber was an obsolete airplane. It was slow and practically defenseless and suitable for use as a night intruder only. In that role, however, it was very effective because of the experience, skill and leadership in the Bisley Wing. An army commander ordered a daytime attack by a Bisley squadron on objective defended by German fighters. The Bisley Wing Commander protested because of the unsuitability of his aircraft and the disproportionate hazard involved. The Army Commander insisted that the mission be performed. An especially able squadron was selected and dispatched. Every Bisley was shot down.

(5) Incompatibility of airplane range and local ground commanders interest. Aircraft at the disposal of II Corps were idle but were held in readiness for an action which might have developed. XII Corps was being attacked by a force of unknown size in an area 70 miles Northward. Very difficult and mountainous terrain separated II and XII Corps. XII Corp's call for air reconnaissance was refused by II Corps because of lack of immediate interest or of responsibility for operations so far distant in terms of ground movement.

g. Resultant employment of classes of Aviation.

(1) Fighters. As a general rule all fighters were used defensively on covering missions. P-38s were used in small strength to "Cover" heavy and medium bombers from bases deep within friendly territory to their objectives and all the way back to their bases. On another extreme, all of the fighters in the XII Air Support Command would have been required to mount a 48 hour "umbrella" over elements of II Corps had not the plan to dislodge two German Battalions from Faid been cancelled. Even at the end of this period, adequate radar control of fighters had not yet been provided. As a general statement no proper use was made of our offensive fighter weapon; it was continually misused on defensive jobs, and habitually in units too small to assure a degree of success proportionate to the expected (and actual) losses.

(2) Observation. The 68th Observation Group (P-39s and A-20s) was in this theatre during the majority of this period. It was equipped, supplied, manned, staffed and trained to a much higher degree than the 81st Fighter Group (P-39s) and at least equal to 47th Light Bombardment Group (A-20s). While the battle raged up and down our 250 mile front where the terrain and communication were both so difficult that highly mobile specialized air observation would have been of extreme value, the 68th Observation Group remained at Oujda, training, cooperating with the maneuvers of the Fifth Army and (actually because of proximity and absence of profitable occupation) patrolling Oran Bay for hostile submarines. The 81st Fighter Group and the 47th Light Bombardment Group were meanwhile rushed into and fully engaged in the battle. The reason for this apparent gross blunder is again one of organization and concept. If the 68th Observation Group had been moved to the battle area to perform the observation for which it was trained, without properly controlled fighter cover, German fighters would have destroyed it quickly and easily. On the other hand an efficiently organized and operated fighter control unit operating over the battle area would have permitted suitable high performance reconnaissance airplanes to carry out reconnaissance operations in a satisfactory manner, and with far fewer airplanes than the number provided in the observation group.

The organization and concept of observation aviation was naturally the result of successive maneuvers where reality was not well appreciated. Actual tactical and strategic reconnaissance operations within this theatre have been performed much more effectively by the tactical reconnaissance (Tac/R) which have been developed by the R.A.F. during two years of battle experience. Action has been taken separately and will be pursued to provide each corps with its own select highly trained and especially equipped squadron for its own air observation and photographic reconnaissance operations. Similarly strategic reconnaissance and photographic mapping should be provided the theatre or senior ground force headquarters.

(3) Light Bombardment. Exorbitant loss rate due to flak on early missions at low altitudes by both light and medium bombardment has been accepted as proof that each must operate at altitudes of 8000 to 12,000 feet in defended areas. Our light bombardment units had no bombsights or bombardiers. Experience in one situation had been taken as a criterion of what can or can not be done in all situations. Light bombardment should be capable of operations at both medium and low altitudes.

(4) Heavy and Medium Bombardment units. While not components of the Air Support Command, heavy and medium bombardment units, in accord with our Army Air Force policies, were frequently placed under the operational control of the Support Command. At that time we found these units capable of daytime operations but only against fixed, clearly identified objectives--all details of which had to be known many hours in advance. These units were of no use whatsoever against fleeting targets in the battle area. Again the error is in our concept of an "air support command" which is a portion of an air force normally excluding heavy and medium bombardment airplanes. It is undeniable that the power of the bombardment airplane must be made available for the real emergency in the battle area.

2. Air Ground Organization for Successful Battle.

a. Reorientation. During late January and early February, plans were laid and a radical reorganization and reorientation of air and ground command, responsibility and function was implemented on February 18, 1943. In the battle area there appeared the Headquarters, 18th Army Group to plan and to direct the ground efforts of the 1st and 8th Armies, and there appeared Headquarters, Northwest African Tactical Air Force to plan and direct air force (not "support force") operations in the battle area.

b. Ground Operations. The weight given to air-base requirements by the 18th Army Group is self-evident in Hq. 18th Army Group Operation Instruction No. 1, dated 20 February 1943. (Copy attached and Marked ANNEX No. 1.)

c. Air Operations. The concept of an independent air force working with a large ground force is self-evident in General Operational Directive, NATAF, dated 20 February 1943 and in "Outline Operational Plan" NATAF, dated 8 March 1943. (Copies appended and marked ANNEX No. 2 and ANNEX No. 2A respectively.)

d. Effectiveness. Recent military history attests the effectiveness of this organization. From November through February, German ground and air units ranged up and down our fronts, thrusting into weakness everywhere and strength nowhere, and meeting in the air and on the ground relatively small units of our ground and air forces. When the reorganization was placed in effect, Rommel's armor was in the Kasserine Valley threatening Tebessa, Le Kef, and incidentally and contingently Constantine or Algiers. Two months later, Rommel's armor was backed into the Tunis plane and, on April 19, the Northwest African Tactical Air Force initiated the air phase of the final battle to capture Tunis and Bizerte. More conclusive proof of military effectiveness could not be exemplified. (For details of air-ground combat, see Northwest African Tactical Air Force Operational Plan for Final assault on Tunis dated 16 April 1943, and Appendix "A" thereto, and First Army Operation Instruction Number 37 dated 19 April, 1943 and Appendix "A" and Engineer Instruction thereto, all attached and marked ANNEX No. 3, 3A, and No. 4, 4A and 4B respectively.)

3. Lessons Learned. The basic underlying cause of the ineffectiveness of air support operations was our inability to concentrate our air effort on particular objectives. Too much aviation was available at all times to ground forces for direct support missions even in periods of inactivity and not enough was available for use in attaining air superiority. Three reasons are presented for this:

a. Organization.

b. Influence of ground commanders.

c. Shortage of equipment.

(a) Organization. The present organization of an air force along fixed functional lines is erroneous. Composite forces organized for particular tasks, are required. For instance, certain forces organized for strategic bombings require their own fighter units. A force organized for operations over the battle area requires a unit similar to an air defense wing. Another force organized for coastal defense requires air defense (Fighter Command) units and sea search units. Total air effort in a theatre of operations is difficult of attainment if the Air Force within the theatre is organized rigidly as is the tendency if formed into a Bomber, Fighter and Air Support Command. It is suggested that the organizational lessons learned by the R.A.F. in the Battle of Britain have been applied too broadly and are not appropriate in a mobile situation.

With particular reference to so-called air support operations, there was formed the Tactical Air Force. In the Libyan campaign, there was organized the Western Desert Air Force. Both of these Forces controlled air operations in direct support of ground forces and all air operations over the battle area. They were organized to emphasize the job of attaining air superiority as the best support that can be furnished to ground forces and as the first mission which must be accomplished to make all others possible. In this lies the difference between the U.S. conception of an Air Support organization and the present organization existing in this theatre.

The basic element of the Tactical Air Force is that which furnishes a radar fighter cover under which air reconnaissance, direct support bombing, and ground operations can take place unmolested by hostile aviation. The 3rd Air Defense Wing was located so as to "see" the battle area, and if possible the advance enemy airdromes to permit efficient direction and control of the fighter patrols. It obviated the need for accompanying fighters for reconnaissance and bombing missions and the desire for standing fighter cover over our ground troops and our airdromes. Also through this fighter control system, reconnaissance and bombing missions could be called back or rerouted to avoid hostile fighters. It should be emphasized that in this role, the Air Defense Wing is not oriented for defense of a locality but for control of offensive operations. Action to rename this particular unit is being taken separately.

(b) Influence of ground commanders. It is desired to discuss this openly as it is a matter of as much concern to ground forces as to air forces. Much of the difficulty was due to inexperience from which the ground forces suffered as severely as the air forces. Fear of a "Stuka" attack was out of all proportion to the material damage inflicted. This resulted in demands for local fighter cover over all movements and local operations. This cover, in addition to being inefficient, prohibited the offensive use of aviation to attain air superiority. When ground troops become seasoned to air attacks, it is anticipated that demands for local cover will decrease as they did in the Middle East. However, as long as the U.S. Air Forces are a part of the Army, these demands are extremely difficult to resist.

Another insistent demand from the ground forces is that, for the sake of morale, our front line troops must be able to see their supporting airplanes.

Apparently the only airplanes seen are enemy airplanes. It is easy to appreciate this attitude but again it is difficult to resist as long as air forces are an integral part of the Army. A cure would be possible by an educational program but the delay involved is dangerous.

The influence of the ground commander also manifests itself in the allocation of aircraft to tasks. The high commander, who is usually a ground officer, is influenced by the subordinate ground commander to a greater extent than he is by the air commander and so the requests of the former for direct support aviation are sympathetically received at the expense of a concentration of the air effort. Again it is desired to point out that even a reconnaissance mission from a concentrated air effort as it normally requires fighter protection in some form.

It is sincerely believed that there was insufficient realization of the importance of airdrome locations in the ground plan or operations. This is an item of terrain which has to be given equal consideration with mountain ranges, river lines, etc., in the disposition of ground troops. Preliminary ground offensives normally have to be undertaken for the purpose of securing airdromes for the main offensive.

The conception of an air-ground battle wherein ground support is given equal weight with air support can become an actuality only when neither the ground commander nor the air commander are subordinate to the other. Both must play a mutually supporting role. In our service, where seniority and discipline are inseparable, honestly coordinate effort becomes almost impossible between a ground commander and an air support commander. (For further elaboration see comments by Air Marshal Coningham appended and marked ANNEX No. 5.) The paradox that the separation of the Army and Army Air Force would bring closer unity between ground forces and air forces is acknowledged. That paradox is clearly supported by the effective employment of aviation with an indirect support of ground forces during the campaign of the 8th Army and Western Desert Air Force from Cairo to Tripoli and the striking success of the 18th Army Group and the Northwest African Tactical Air Force in the Tunisian campaign.

(c) Shortage of equipment. This factor played a large part in the ineffectiveness of early air support operations. It requires no discussion here except to point out that no provision is made for an aircraft warning service and fighter control in our Air Support Command set-up.

(d) Air Support set-up. A general tendency did exist to assign disproportionately large air units to the defense of harbor and other rear areas installations. Any such assignment obviously reduces offensive air effort in the forward areas. The air offensive has been found to provide the most effective defense of rear or other installations.

4. Conclusion.

(a) It is clear that a modern battle is not fought or won by a ground force alone or by a naval force alone. Any modern successful battle consists of a battle in the air which must be won before the surface battle is begun. If the air battle has been won the surface forces are freed from effective hostile air attack and the offensive power of the free air force can be applied directly in support of the surface forces. Modern battles are fought as intensively in the air as on the ground. They are combined battles in which the

airforces are placed in a supporting role no more often than the ground or naval forces. Each carries out its part of the task to attain the common goal.

This conception cannot be applied if one force is subordinated to another. An air force coordinate with the ground force and the naval force is the only solution by which the three forces can be made to play coordinate roles. Page 2 of the pamphlet "Some Notes on High Command in War" (attached and marked ANNEX No. 6) is cited as evidence that this conclusion has also been reached by at least one successful allied ground commander.

The effectiveness of the support rendered 18th Army Group by the coordinate air force working with the allied armies is attested by the commander 18th Army Group on May 8, 1943, in annex No. 7 appended hereto.

(b) The designation of a small part of an air force as supporting aviation is erroneous as it tends to hinder concentration of the entire air effort on the particular task at hand.

(c) A rigid functional organization of air forces is unsound as air operations cannot be divided into exclusive functions.

III. RECOMMENDATIONS.

1. Doctrine. Rewrite the War Department publications to delete all references to the supporting role of aviation and to stress the coordinate role of air, land and sea forces. The operations of each force to be controlled by an expert in the furtherance of the common mission assigned by highest authority. This does not conflict with the principle of unity of command.

2. Organization. The group should be the largest organically homogenous unit specifically designated "bombardment", "fighter" etc. Wings, divisions, air commands, and air forces should be headquarters designed to control an air task force organized to carry out a specific air job. The only exception to this may be a wing headquarters similar to the present defensive, immobile Air Defense Wing. To expedite administrative procedure, wings and commands should be purely tactical headquarters organized to direct and coordinate tactical operations only. To a limited extent, the composition, if not the organization of the various numbered air forces already reflect the tasks which they are expected to accomplish.

The ineffectiveness of observation groups should be accepted as proved in this theatre and maximum effort should be made to elevate the position of our present observation aviation to a much higher level by the immediate formation of truly proficient tactical and strategical reconnaissance squadrons and photo mapping squadrons.

L. S. KUTER

Brigadier General, U.S.Army.

Deputy Commander.

I Certify
This Is A TRUE COPY
Wesley F. Craven
WESLEY F. CRAVEN
Lt. Col., A.C.

APPENDIX 2

May 25, 1943

14-00000
The United States Army Air Forces
6-1-43
Date Initials

Assistant Chief of Air Staff, Intelligence

INTERVIEW WITH BRIG. GEN. LAURENCE S. KUTER

(Deputy Commander — Tactical Air Force, Tunisian Campaign)

oOoOo

14-00000
The United States Army Air Forces
6-1-43
Date Initials
Kuter, L.S.
25 May 1943

I'd like to state that my discussion this afternoon will be concerned with the Northwest African Tactical Air Force, operating with the ground forces in that battle area. I'd like to be sure in the first place that any interest in that immediate and local subject should not obscure the role played by the Strategic Air Force, or by the Coastal Air Force, or the Navy in Northwest Africa. It was appreciated in the Headquarters, Tactical and 18th Army Group. The Coastal Air Force smashed supply bases and shipping and stopped ammunition — and by performing many other distant support role functions — very efficiently did make that victory very much quicker and cheaper than it could possibly have been otherwise. Please don't lose sight of it in the interest and excitement and enthusiasm centered right in the battle area itself.

The views that I present here are more than my personal views — they are the official views of the American Deputy

[REDACTED]

Commander of the Northwest African Tactical Air Force. Where official action has been recommended, it is coming through channels and will arrive in Washington with the views of General Spaatz, Air Chief Marshal Tedder, and General Eisenhower. I am presenting this to you, therefore, as no more official than that of a very low unit in the chain of command.

In presenting the lessons that we learned, they will be based on the errors that were made. In presenting this there may be an appearance of muck-racking, of citing dismal failures — but please don't believe that everything was wrong. There is some concern in enumerating the mistakes — most certainly in listing the errors we made in the Tactical Air Force — criticizing my own organization for which I was largely responsible. Surely things that happened wrong in Air and Ground are critical of General Spaatz and General Eisenhower; of everybody in command of the theatre. I will enumerate those of this particular group, however, and feel confident these separate items will not be lifted from their context and presented in a false impression.

Also, on this general subject, I will endeavor to show you one organization wherein our air components were largely distributed and under the practical command, or control, of lower ground commanders. Under that set-up I will enumerate the errors made, the difficulties we had, and the reason why we

[REDACTED]

were losing the battle at that time. That may present the inference that the only stupid blunders made were those made by ground commanders in the theatres where we had our air units at their disposition. That would be most false. As announced in the first place, we were high on the list of blunder makers -- our bombers did get lost and did bomb the RAF air base at Souk el Arba and killed one airman, fourteen soldiers, twenty-two Arabs, and wounded about twice that many in each category. Our Western Desert fighters did intercept and shoot up Strategic B-26's. Our bombers did jettison bombs on Headquarters, 18th Army Group, on Headquarters, First Army, and Headquarters, 9th Corps. We stopped after that, I am glad to say.

Also much of our organization and operations stemmed back directly to items the RAF or British had learned. Because there are a number of those, please do not infer that everything the RAF did was always right, and things we did were always wrong. Such is not the case. Air Marshal Cunningham would be the first to tell you that our fighters in the air were the best fighters we had in the theatre, and the first to tell you that the RAF had been definitely wrong in sticking to a large fragmentation bomb. They were most anxious to drop their practices that had been proved unsound, and pick up the better items that we had.

My reports will differ from most of the reports that have

[REDACTED]

reached Washington. You should know that during the entire campaign in Tunisia with the exception of casual visitors — friends dropping in for lunch — we had only three American officers look into the Air Support business from the viewpoint of the Tactical Air Force and of the 18th Army Group. From the viewpoint of the air units providing the support, and the ground commander who was supported. I am sorry to say there were only three. They were Colonel Dexter, Army Ground Forces, whom most of you know, Major General Tom Handy, G. S. C., who has not yet returned, and General Pinky Ball, who is still in the theatre. I personally regretted that I was unable to get more of the influential American visitors in to talk, not so much with the Tactical Air Force, but to the people whom we were supporting — into talking to General Alexander and his 18th Army Group staff. General Alexander should be the authority on support or its effectiveness or ineffectiveness. He was the fellow for whom we were working.

It is perfectly natural that the comments on the subject of air support stemming from the North African theatre would present air support in quite a different view than those in which we saw it. And I am quite honest in my belief I am presenting General Alexander's view also. The comments reaching Washington naturally stemmed from our Americans in the theatre — naturally

[REDACTED]

[REDACTED]

stemmed from our Second Corps ... and our Second Corps never was, at any time, in a main effort in the ground army. (At no time during the entire campaign was the Second Corps in the spearhead or main effort.) Where our whole concept in applying air forces in the battle area was one of concentration and mass, it is quite natural that the Second area efforts saw very little of it.

We had a good picture in North Africa of the wrong way and the right way to work air forces with ground forces. We started off with the current American concept of support aviation as it was actually applied in the battle area. We started off with the 8th Army in the Western Desert working with the Western Desert Air Force. Our forces in the North consisted of two major elements initially -- the British First Army in the North and the American Second Corps in the South. With our Second Corps was the 12th Air Support Command. By February the 12th Air Support Command included two fighter groups, a light bomber group, an observation squadron -- a considerable amount of air strength. There was about the same, or a little larger, air force in the RAF 242 Group in the North, which in turn was attached to the First Army. We had in that picture, then, three large ground elements -- each of which had elements attached in the North. There was no attachment in the Western Desert. (There was an air force there with no relationship with these Air

[REDACTED]

Forces, which worked with the 8th Army alone.)

About the 22nd of January that primary organization blew up. (It actually blew up due to a series of misunderstandings and poor communications.) On the 22nd of January the BCS First Army (Chief of Staff, First Army) telephoned G-3 Allied Forces and stated he was unable to get bombers on one particular objective he wanted. The situation had broken up completely and he had to have some bombers. He went to General Eisenhower, who gave it to General Spaatz. I was there at that time. We gathered up all the bombers in the theatre that were not actually on a mission at that time. That was ten o'clock in the morning. By two o'clock we had a sizeable bomber force in hand prepared to go out and hit this objective.

General Cannon had the Bomber Command at that time at Constantine. Before delivering the attack General Cannon went across the street to see the First Army to coordinate this particular effort. It was most fortunate he did. He went into the First Army and they asked him to hold it for awhile. They weren't quite sure. About two hours later they asked him to cancel it — because the particular objective they were worried about was captured by our troops the night before. This faux pas was due primarily to internal communications within the First Army in that particular instance. That focused General Eisenhower's attention on apparently a faulty organization — just

[REDACTED]

after the Casablanca conference when the decision had been made there to form an Air Force to work with the Ground Forces. At that time I went down to endeavor to lay the ground work for this force, which was actually formed by orders on the 1st of February and began to operate on the 18th of February.

Until the 1st of February, we had had a series of excellent examples of the failure of that sort of early organization. We were sitting in this whole area with considerably more airplanes than the Germans and the Italians ever had. We were sitting at Souk el Khemis with airdromes within 80 miles of all the air bases and sea ports in this theatre — and during this time the Germans were flying in a thousand men a day, and were moving in ships in great numbers. In fact, during the period, they moved in 150,000 men, supplies, and equipment and maintained them some 80 miles from our own airdromes. We had air units scattered up and down 250 mile front on almost exclusively defensive roles. The Germans, operating a smaller air force, were able to strike — and strike quite effectively — being opposed only by the local units that just happened to be there to oppose them. All of these ground commanders, at that time, admitted quite freely that the thing we needed most was control of the air. Each of them insisted, however, that the air force to go out and get that control should be somebody else's air force — not his own unit; because his air force was busy

[REDACTED]

on his own front. Thus there was no sustained effort against the German Air Forces.

Again I shouldn't be critical of the Corps commander who believes somebody else's air force should go get control of the air. The Corps commander is there with a Corps area to take care of — it is the one thing he is interested in and for which he is responsible. Quite properly—his whole attention must be in that particular corps — and he can't be expected to have an interest in the theatre as a whole.

The fact that our forces were misemployed due to that general set-up, I should like to illustrate with four or five specific instances. The outstanding one of which is undoubtedly associated with the air umbrella. In Tebessa one afternoon, we were discussing an operation to take the Faid Pass in the next two or three days. Faid is a rather small pass on which there were two German battalions — one on either side of a rather small hill. An arc of hills was behind Faid and it was believed that two more battalions were in there. (We had a division that was planning to take Faid.) In that discussion it developed the German Air Force could quite possibly marshal 24 Stukas, and that we might expect an attack by 24 Stukas on Faid Pass. With that knowledge, the Corps Commander insisted that the air commander place an air umbrella over Faid over the two successive days of the attack. He refused to stage an attack,

[REDACTED]

[REDACTED]

or even to plan or discuss one without that prior requirement. We explained that time and distance and the number of fighters we had would permit us to mount a constant patrol of 12 fighter airplanes. We pointed out the fact that 12 would interfere with, but would not prohibit the delivery of a determined Stuka attack. And furthermore that using those 12 fighters that way would prohibit using our light bombardment group at all.

At that time we had no control of the air. We weren't helpless in it, but we couldn't use light bombers at all without a strong fighter cover. We further explained that using fighters over the Faid Pass for those two days would stop all reconnaissance. The ground commander regretted that he couldn't have any reconnaissance. This was particularly important there — in that he was moving into a relatively small force and the real threat lay in the moving up of enemy reserves. He regretted that he couldn't use his bombers on the reserves, but he insisted that the air umbrella be mounted those two days to provide what he knew would be partially effective only against 24 Stukas. That is an excellent illustration of the complete failure to utilize any of the offensive or reconnoitering capabilities of the force at hand.

On the subject of Stuka, I should like to add that that word is not being used by our own people, and hasn't been for

[REDACTED]

[REDACTED]

the last month or two. It is one I caution you against. It is largely a journalistic attack. The German has used his Stuka almost solely as a dispeller of a mob. A Stuka is an effective weapon to use against a rabble. A Stuka has not been used against well-organized or trained ground troops in the 8th Army. It had not been used for six months when we arrived. The Stuka was used against green troops in the First Army area and the Second Corps area. It had considerable morale effect. It did almost no material damage. The average amount of damage done by 18 Stukas up to the point the Germans quit using them on the 8th Army was one killed, four injured, one half-track destroyed, and a number of motor transports put out of commission. The last Stuka used sometime in April was used against our First Armored Division. Eight of them came in and our First Armored Division shot three down. They immediately vacated the theatre and never appeared again.)

Then we had air forces scattered all over the theatre the strategic view of the air men was completely lost in the conduct of the battle. Time and time again, the importance of the air bases near the Thelepte area was emphasized by all the air men in the theatre. At the time when Rommel was east of Tripoli, this air base area gave us, actually in Rommel's rear, a magnificent base for operations against Rommel. The

[REDACTED]

strategic value of that air base was believed to be of the very highest order by airmen in the theatre. However, until the 18th of February, the strength in this area was dispersed around Medjez el Bab. That was where the strength was -- up here in the naturally strong defensive terrain. By the middle of February we had evacuated Gafsa, and the enemy panzer divisions were playing around in the Kasserine Pass. We had plans prepared, and it looked for awhile as if we would be pushed back even out of the Tebessa air base area.

I am sure that the reason we were unable to operate against Rommel's rear at that time was because the strategy in this Tunisian theatre was dictated solely from a specifically ground viewpoint. An outstanding example of the misuse of aviation equipment at that time occurred at Youks. The Beaufighters were equipped with air interceptor equipment -- RAF equipment at that time which was under the British most secret category. There was a specific prohibition of flying the Beaufighter where that equipment might fall in the hands of the enemy -- or over hostile territory. We moved some Beaufighters down there with the object in mind of stopping night harrassing attacks, and possibly intercepting against some of the night aircraft the German was using in the 2nd Corps area and on airdromes those nights. But the Corps commander directed the Beaufighters to

[REDACTED]

move out and operate in the vicinity of hostile airdromes. The local air commander pointed out to him the fact that orders from air channels prohibited that. His answer was that he was there to give orders, and not receive them — and that the Beaufighters would take off. They did take off, obviously prejudicing secret air defense all over the world for a very local operation of no great importance.

The most glaring example of the misuse of an aviation unit at that time is cited in the case of a squadron of Bisleys. The Bisley is a Blenheim, modified in 1939 — a very old, obsolete, light bomber. (It was useful at night only. At night, incidentally, it was very valuable.) However, the Army commander ordered a Bisley squadron out in daytime to attack a German airdrome at which he believed some Stukas were based. The unsuitability of the Bisley airplane for that type operation was presented to him very strongly; but he ordered the squadron out on the mission. A special squadron was selected for the mission. The 242 Group picked the most able people they had to handle this extremely difficult job. Unfortunately, the entire squadron was lost.

This situation existed until the 16th of February when the Tactical Air Force was formed. (I believe you are all familiar with the set-up from that point on wherein the Tactical Air Force operated — coordinately and equally — in a cooperative

[REDACTED]

[REDACTED]

role with the top ground command in the theatre, Headquarters 18th Army Group.) The first effect shown on the ground of that organization was in Headquarters, 18th Army Group operations. Instruction Number One was to the effect that the ground units in the theatre were directed to hold positions to cover the following vital areas: (a) Landing grounds in the Tebessa area (b) The plain and landing grounds between _____ and Thala (c) The gap between Sbiba and Mateur, and (d) The Medjer el Bab - Medjerda valley.

The Northwest African Tactical Air Force was an air force that operated in an air force role. Its directive initially — and throughout the campaign as a matter of fact — listed as its functions: First, the defeat of the German Air Force and; second, rather, when it did get the German Air Force defeated, the isolation of the German army and then; thirdly and lastly, the redirection of all striking effort against the German Army in direct support of the ground push forward.

I'd like to review briefly the final battle for Tunis under that organization. In the final battle the Second Corps moved up north and General Bradley's headquarters were at Beja. I was pleased to be with him on the afternoon General Anderson came up (on about the 17th of April, I believe) to check the final plan of the British First Army battle for Tunis. Even in this last battle, the role of our Second Corps was still vary

[REDACTED]

[REDACTED]

definitely that of a second ^{arm} ~~axis~~ effort.

I know our chart shows the Second Corps not as a unit of the First Army, but I'd like to read you Paragraph 2 of the First Army's field order for this last battle. It says: "The Second U. S. Corps is under the command of the 18th Army Group. But for these operations the action of the Second U. S. Corps is to be coordinated and all necessary orders and instructions issued directly by the First Army." Quite obviously the command of the Second Corps was an academic question and the First Army issued all necessary orders and instructions direct. The same order tells the Fifth Corps. "5th Corps will deliver the main attack on Axis, Medjez, Tunis, and gives the Second Corps its effort in the North. The Second Corps will, as its main effort, advance on the Axis"

I feel that I should remind you continually that even at this last time, the Second Corp's effort was secondary effort. General Bradley completed this remarkable move of his corps up to the North, and on the 17th gave General Anderson a firm answer that he could push off on the morning of the 22nd. The morning of the 22nd was D Day for the ground force forward movement for the final battle.

The final battle began on the night of the 18th-19th of April when we employed forty Bisleys and fifty Wellingtons, during the night, against German airdromes; and we continued for

[REDACTED]

[REDACTED]

72 hours, day and night, flights against the German Air Force. It was during these 72 hours we had some spectacular success, primarily against German transports. At the end of the combined plan — the "Army-Air plan" — for this battle — it was concluded we would have control of the air by the morning of the 22nd. That was the principal factor that determined the 22nd as the date. We took 72 hours to get it and it worked. On that day we had three fighter squadrons, ordinarily not over two at a time, in the German airdrome area just daring the Germans to try and get up. We had, on the morning of the 22nd, a large proportion of our force to be directed directly against ground objectives.

The attack did start on the 22nd, but bogged down on about the 25th. It was a general reorganization in which the 9th Corps was pulled back. However, the 2nd Corps continually moved forward. There was no stop in the 2nd Corps, although the main effort bogged down. 9th Corps pulled back behind 5th Corps, four divisions moved clear around from the 8th Army — which again was a remarkable operation — an operation for which the Tactical Air Force took a considerable amount of credit. We believe that the Germans never did know that the 8th Army had sent four divisions all through this country and back up in the vicinity of El Aroussa. The Germans never did see it from the air; no air reconnaissance was permitted them in that area at

[REDACTED]

that time.

The ground forces then were again prepared for a last break through just east of Medjez on the morning of the 6th of May. (By that time we had undisputed control of the air in this vicinity. We still had fighters with bombers -- but the ratio had gone from three fighters per bomber, to three bombers per fighter. We did not at any time send our bombers out with no fighters in the area at all. The Germans were still operating fighters from Sicily and Sardinia -- and they still had advanced airdromes they might sneak into.) On the morning of the 6th of May we had over a thousand sorties by noon, on a front that was 6,000 yards wide up the road from Medjez to Massicault. We had a heavy prearranged bombing attack. It was a continual attack -- no stop in it. The first two hours on one group of hills -- after two hours to the next group of hills -- and there was a third prearranged point for these attacks. They went through on time, and in tremendous weight -- and two infantry divisions moved up on either side of the road enabling the Second Armored Division to definitely break through by the noon of the first day.

This particular support on the morning of the 6th of May was twice as heavy as had ever been presented, even at the previously well-known battle of Alamein. The value of the bombing itself ... I don't know what that was ... I don't believe it will

[REDACTED]

ever be known. The targets were poor as seen from the air. They were positions well dug in and excellently covered -- positions the German put in just for that sort of an attack. The fact remains, however, the attack did roll through on schedule.

During the rest of the afternoon on the 6th of May we had another thousand sorties which we had hoped to employ against targets of opportunity. We didn't get them immediately after this break-through. We did put about 500 of them in the San Cyprien area, in the direction where I believe the Hermann Goering division, which had been along this position on this road, was now moving. We believe we did stop the movement of any reserves in line. At any rate we know our armor reached San Cyprien and was unopposed.

The next morning we did find a very profitable target of opportunity. The remnants of the 15th Panzer Division which had been up in this area (Ferryville) were down this road and apparently had got about in here and stopped at Tunis. They endeavored to turn around and go back. We had about 250 fighter-bomber sorties on that road that morning (the seventh of May). Two days later (the ninth of May) driving down the road the results of the seventh were very pleasant to observe. There were motor transports burned up or shot up on either side of the road -- some still in the center of the road. The road was well littered and it was difficult to weave one's way through.

~~SECRET~~

On the 9th of May I had considerable pleasure in coming up to Tunis. We landed at El Alouina where we had taken a personal interest in the El Alouina airdrome. We found a number of wrecks on the airdrome. (A surprising number of the airplanes were repairable and could be flown away in a short length of time.) We drove up to Mateur with General Cunningham and Air Marshal Cunningham, and picked up General Bradley. We went over and looked at his prisoner of war cage -- which at that time contained about 25,000 German prisoners and about 1,200 Italians. The Germans themselves were obviously well-clothed; they looked strong and big and healthy. Their individual morale was high. (They were streaming down the road.) Many of them were driving their own transportation. A lot of them wore flowers in their hats and that sort of thing. (They were singing.) There were no provost guards to amount to anything, anywhere on the road. They were coming up to apply for admission into General Bradley's pen. As they came up, the general designated a number of German officers to take charge of these men and form them in companies of a hundred, which they did with a few smart military commands. The men, as a normal statement, fell in and marched off like a bunch of guardsmen, frequently singing German marching songs.

As individuals their morale was high. They had left a lot of food and warehouses in this vicinity (Bizerte) full of

[REDACTED]

rations. General Alexander learned with quite mixed emotions that one was full of bully beef the Germans had captured from the British long ago (probably in Bengasi) and apparently had not gotten around to eating yet. General Bradley fed them bully beef from then on. They had a surprising amount of gasoline. We thought they were out of gasoline — but they weren't. They had a lot of ammunition. They had been destroying it for about a day, but they ceased destroying it under General Bradley's terms of surrender. (I should point out also there were two SS divisions included among them — and a portion of the 15th Panzer Division. They were well-trained, tough soldiers.) The fact that that particular group of definitely above-average German soldiers did haul down the flag and definitely did not fight to the last man is, I think, most encouraging. It may be significant that, during the two days that this surrendering was going on, the sky was full of patriotic last messages from German Commands to their units, and also back to the Fatherland. Yet, during the whole two days, only one of them had a "Heil Hitler" in it.

I think the extent of the collapse — the suddenness of the collapse — was most forcefully illustrated to us by the error made by the British Broadcasting Corporation when the 7th Armored Division moved South from Tunis to this point (Hamman Lif). BBC, apparently through a typographical error, broadcast

[REDACTED]

the fact that the British moved south from Tunis to Hammamet. The German radio picked that up and repeated it. The Germans told the troops down there that Cape Bon peninsula was cut off, the armor going from Tunis to Hammamet. As a matter of fact it was 18 hours earlier than anything of ours got down there. This clearly indicated that the speed of the break-through had thrown the entire German communication establishment into a storm.

Our First Armored Division did a bit of a job up here of which we should all be proud. The road near Ferryville skirted very close to the lake, with quite a steep hill on the right flank. On the 9th of May, driving up this road, you could see on this nose coming down to the pass here, six or possibly eight 88 mm. guns on this side of the crest of the hill and twelve 50 mm. anti-tank guns. They had obviously been simply pulled up near the crest of the hill and fired a few rounds. Our armor coming this way wouldn't be stopped, and was coming so fast, that those guns were never put into position at all. If they had been they certainly would have taken some time to remove.

Also on this road in this vicinity were three or four fighter airdromes in which we had a particular interest. On one of the airdromes one FW-190 provided mute, but very effective testimony, as to the speed, or the effect of the speed, of the

[REDACTED]

[REDACTED]

break through there. This FW-190 was sitting on the airdrome, with a hole in the canopy where it had been shot through in combat. A new canopy was lying beside the airplane, on the ground. The crew chief's tool chest was out. The tools had been taken out of the tool chest. The hold-down lugs on the old canopy had been removed. The airplane looked exactly as it would on any normal airdrome if the crew chief had been working on the airplane and somebody sounded mess call — or any other sudden call that might come up to cause a fellow to leave the job. Quite evidently there had been no thought of abandoning the airdrome — no preparation to dispose of this stuff. Altogether we got about a hundred airplanes of various types that were repairable or in good condition.

There are two or three other general statements, or conclusions, that came from this business that I feel I should mention: One of which is the fundamental error of basing any ground plan on any air operations of any nature. That is a poor advertisement for an airman. It is very true, however, that the circumstances which can keep air support or air cooperation away are so many that I am convinced that any ground plan which depends for its success on something which must happen in the air is unsound.

The Western Desert Air Force and the 8th Army between them had agreed on a rule, inasfar as bombing close to the front

[REDACTED]

[REDACTED]

line is concerned, that there would be no bombing unless colored smoke was shown. That was religiously enforced on the ground and in the air. The marking of the front line in order to bomb close to it is important. I was told that the British Army had for four years been discussing and studying and considering providing colored smoke for front line units. They had none. The German Army had a lot of it, however, and the British 8th Army captured enough of this several months earlier to use colored smoke (German smoke) effectively throughout the majority of the push across the Western Desert. It is most effective, and without smoke any bombing close to the front lines is very dangerous.

On the subject of the identification of airplanes, all the ground units in the theatre -- the commanders of all the ground units in the theatre -- had done everything that they could possibly do to prevent shooting down our own airplanes from our own ground fire. They had taken every possible official action that could be taken, but we were still losing a distressing number of airplanes. All of the P-51's that we lost, we lost to our own fire. That item isn't of great significance; because the P-51 does look a great deal like the ME-109. We did lose a lot of P-39's by our own fire, however, which look like nothing in the world but a P-39.

[REDACTED]

[REDACTED]

The orders that we published (and vigorous action was taken to enforce them) were that there would be no firing at aircraft unless positively identified as enemy or if they were bombing or shooting; unless they were actually committing a hostile act. That is correct and sound. One other step is clearly necessary — not only considering the safety of our own airplanes from our own fire, but for efficiency of operations on the ground — is that the general assumption that "the unknown airplane is a friendly airplane." There are many reasons for this. We had a lot of sleepless nights on the front because of the continual drone of enemy airplanes, when they weren't enemy airplanes at all. They were Wellingtons or B-17s going or coming from missions to the front. There is no way under the sun of letting the battalions, every night, know where the airplanes are going to be flying that night. If the idea is fixed that the unknown airplane is one of ours, the anti-aircraft gunner will get on it with a smile — he will be on it only to track it and get a little practice. If the unknown airplane is an enemy airplane, they get on the airplane and are tense — their trigger fingers are active. If it is a tactical reconnaissance airplane ... if it's got to come down and look at something in that vicinity, the fellow quite often doesn't have a chance. That general attitude — that airplanes wherever they might be are our airplanes — is one that I think

[REDACTED]

[REDACTED]

probably the Second Corps does have now. I am quite sure the 5th Corps does. They have seen enough airplanes. We were careful to route over Corps headquarters, whenever possible, the air efforts or missions we had going out into that vicinity. (But after all this jettisoning of bombs on our headquarters, I don't know whether it is such a good idea now.)

The morale value of flying over our own troops I will freely admit is one that is underestimated by the air men and I believe it is over estimated by the ground commanders. Again in the secondary efforts, particularly, there may be days and days and days when the fellow in the front lines never sees one of our own airplanes. It would help his morale no doubt if he saw some airplanes of ours. The Corps, however, does have a daily statement of yesterday's operations. It is my belief that it would be better that the Corps endeavor to let at least the divisions (or if possible, its regiments) know what is happening in the air, than to endeavor to fly airplanes around so that the people can see them.

It is surely my principal conclusion here that, where the top ground commander can have with him a substantial air force working with him on the same job, he gets a very high order of direct support. Where the contrary holds -- where the air units are scattered all up and down the front, operating under the command or control of commanders who can not have the

[REDACTED]

whole picture -- we are in effect reaching out against the enemy with a bunch of fingers, where the other conception gives us a blow of the fist with which to meet him.

On the subject of observation, we had, in the American air effort in Tunis, very little of which to be proud. We came out there with an observation group which had grown from a long series of maneuvers in Louisiana, Texas, and North Carolina. And, in the battle area, it showed all the evidence of Louisiana, Texas, and North Carolina. I believe that in Africa we clearly did learn some lessons from the RAF. The Tactical Reconnaissance Squadrons of the RAF provided a high order of reconnaissance service to the British Ground Forces. These forces contain numbers of items which I believe should be immediately picked up by our forces. I know the personnel that we had in the 154th Observation Squadron is every bit as able as any Tactical Reconnaissance personnel in the RAF. The commander of that group is back here now reporting into OTU's on the first of next month. He knows more about observation job in battle area than any other American aviation we have. I brought back another South African air force officer who has gone through the entire business all during the war, and propose that he be put to work here on the Air Staff, and I am quite confident that between Colonel _____ in the Air Staff and Colonel _____ in the field, we can turn out a

[REDACTED]

[REDACTED]

reconnaissance squadron that will, in the battle area, give out a very high order of air observation.

In the reconnaissance feature also, our photographic service to the ground forces was very poor until the last two weeks. We then did get about six P-51's (Mustangs) with cameras working on the front of the First Army; and they did turn out a very large number of usable tactical reconnaissance photographs. They turned out nothing for the artillery or nothing in the mapping field. They did, for the last battle only, prepare for use by both the ground and air echelons, 1:50,000 uncontrolled mosaic map substitutes of the entire battle. It was a good photograph. They manufactured 45 copies of it photographically in Algiers. The Army Topographic Battalion in Algiers manufactured 5,000 lithographic copies of it which were of quite poor quality. G-2 Second Corps said they were of no use.

General Hanley: It is not clear in my mind as to the system that was used to forward to your Command calls for support. The conception back here is, as you know, that as each unit needs it it calls on some one for it. You had a prearranged plan, as I understand. You had a plan of attack and your Command was coordinated with the 18th Army Group. How did the unit down below, which wanted help, get it?

As For each principal operation we set up a considerable

[REDACTED]

[REDACTED]

proportion of the Tactical Bomber force — frequently the entire Tactical Bomber force — operating either under the 12th Air Support Command or under the 242 Group, on direct call to the 242 Group or the 12th Air Support Command. The 12th Air Support Command was, most of the time, side by side with the Second Corps. 242 Group was at all times side by side with the First Army in joint headquarters; the importance of which simply cannot be over-stressed. Whenever the ground commander and air commander got separated trouble started right that minute.

Two examples in answer to your question: Our 34th Division was moving forward in this area — I believe Pont du Fahs — and had been bogged down. It was heavy going and the Germans were in position on these hills. Our 34th Division was in here and our 12th Air Support was back here. The Second Corps at that time was in Gafsa. The 34th Division was part of the 9th Corps which was up in the hills here. We had the entire Tactical Bomber Force with the 12th Air Support Command at that time. The set-up was that General Ryder, when he wanted Air Support, would call on the 9th Corps who was receiving calls from all three of its divisions. It filtered them and sent them to Sbeitla — where General Williams had the bombers and where he sent them off to perform the missions. (This story goes over three days.) On one day General Ryder called for support. The 9th Corps was unable to get communication with the 12th Air Support at Sbeitla —

[REDACTED]

[REDACTED]

no communications through at all. General Alexander learned of it late that day, and his communications fellow went to work on the 9th Corps that night; and there were communications the next morning. On the next day we set up for the 34th Division two squadrons of light bombers to be prepared to take off and briefed for this general area, simply waiting for the exact coordinates of the thing they should hit. General Ryder put in a call sometime during that day -- one call which the Corps at that time would not forward. General Ryder was getting desperate about then; and all of us being quite unhappy about it. We set up, the next day, a light bomber group for direct call to the Support Command from one of the divisions in this Corps. That was going pretty far to endeavor to get to General Ryder some support. We told the 9th Corps we were doing that and told them to listen in to General Ryder's calls and veto them if the 9th Corps knew they should be vetoed. The very first thing the morning of the third day, the 34th Division called for a heavy attack on a small hill just the other side of this road here on which a lot of troops had just been observed. Now, it happened that General Williams knew back here that the Welch Guard from another division moved down and had taken that particular hill the night before.

That probably illustrates all the difficulties we were having in that theatre in those three days. Communications were

[REDACTED]

very, very poor. We had here a sizeable air support force to work with the 9th Corps, and the 9th Corps was up someplace in the hills and the Air Support force was some other place. We illustrated the real danger in permitting direct calls from any units — even a unit as large as a division.

- In the battle beginning the 6th of May, Headquarters First Army was in this area here two or three miles from the principal airdrome of Souk el Khemis and Headquarters 242 Group was with the First Army. They were always close together ... Joint Operations rooms. Each night the total air effort for the next day would be known here at 242 Group and at First Army. The Operations people, air and ground, would look at the operations for the next day and, in this particular country where cover was good and targets were very few, nine out of ten of the missions were prearranged the night before. (The prearranged mission avoids having the unit sit here all day long waiting for a call that never comes. It does get some bombs on something; and furthermore, it gives you a unit that is working. One, moreover, which can be re-directed on a target of opportunity if and when one appears — as quickly as you ordinarily could get to a unit cold, sitting on an airdrome.

Calls throughout the First Army over the entire Army area came into 242 Group, from each Corps where the airmen were sitting

[REDACTED]

[REDACTED]

right side by side with the ground operations fellows. The priorities of various calls were determined right here in 242 Group and First Army. The calls went from there direct to the units from which the effort was made. It isn't fast. The thought of having airplanes back over our shoulder someplace to put down a terrific bombardment (in General Anderson's terms) is one that won't work. The best we could ever do was on the very last day when we had every airplane that could fly loading and bombing and loading and bombing, and we were able to hit, in this instance, one fat target up here twenty minutes after 242 Group knew there was a target there.

Q: You spoke of there being lots of gasoline, ammunition, food, and so forth, when the action stopped -- generally throughout the area -- Tunis and Bizerte, both. What caused the suddenness of the collapse?

A: There was no instance of anybody firing the last round or fighting to the last man any place in the theatre. The abundance of supplies and food and equipment was much greater in the Northern area than farther out. The break through from Mateur through Ferryville and eastward was very fast and sudden. We had our Armored division out there doing a superb job of making a break through. I think it was the suddenness up there that contributed mostly to the completeness of surrendering. It happened throughout the whole theatre. Without being too

[REDACTED]

optimistic about that, I think one should also keep in mind the fact those same Germans up there had been fighting very well and bitterly for many, many days — when it was clearly apparent to any of us that the jig was up and that they were going to be destroyed or surrender. They didn't fold up until it was quite evident that any child could see it. We had them completely isolated. We had destroyers lying all around the coast in the day time. We had the whole air ... and the sea ... and it was unescapable at that time they were obviously clearly whipped. It was just as obvious five days earlier that there would be no evacuation — that they would be defeated or surrender. It took an overwhelming evidence to cause them to give up. Then they did give up and just completely folded.

T H E E N D

APPENDIX 3

SURVEY OF NORTH AFRICAN CAMPAIGN PARTICIPANTS ON THE SUBJECTS OF CENTRALIZED CONTROL AND AIR SUPERIORITY

The following survey was addressed to various air and ground forces veterans of the North African campaign:

1. What were your rank(s) and duty assignment(s) from July 1942 through June 1943?
2. What unit(s) were you assigned to in North Africa?
3. What was your assessment of Allied air superiority at the beginning, during, and by the end of the North African campaign?
4. By what point in the campaign would you say the Allied air forces had definitely achieved air superiority?
5. Was there any particular type of air mission (i.e.: reconnaissance, close support of ground forces, isolation of the battle area, or counter air force) that received particular emphasis or priority? (In terms of the numbers or urgency of the missions flown.)
6. If so, did you perceive any shift in emphasis during the course of the campaign?
7. Did the consolidation of all Allied air units under Northwest African Air Forces in late February 1943 have an impact on the types of missions emphasized and flown?
8. If so, did this have an effect on the degree of air superiority achieved by the Allies?
9. Did the reorganization contribute to Allied air superiority in any other way? If so, how?
10. Were there any other factors that contributed to Allied air superiority? If so, were they more or less important than the factors already discussed?

BIBLIOGRAPHY

BIBLIOGRAPHY

BOOKS

- Arnold, Henry H. Global Mission. New York: Harper and Row, 1949.
- Ballard, Jack S., Development and Employment of Fixed Wing Gunships, 1962-1972. The U.S. Air Force in Southeast Asia. Washington, DC: Office of Air Force History, 1982.
- Batchelor, John H., et. al. Air Power: A Modern Illustrated Military History. New York: Exeter Books, 1979.
- Bergerson, Frederic A. The Army Gets an Air Force: Tactics of Insurgent Bureaucratic Politics. Baltimore: The Johns Hopkins University Press, 1978.
- Blumenson, Martin. Kasserine Pass. New York: Berkely, 1983.
- Bowen, Ezra. Knights of the Air. The Epic of Flight. Alexandria, VA: Time-Life Books, 1980.
- Bradley, Omar N. and Clay Blair, collaborators. A General's Life. New York: Simon and Schuster, 1983.
- Bradley, Omar N. A Soldier's Story. New York: Holt, Reinhart and Company, 1951.
- Brereton, Lewis H. The Brereton Diaries. New York: William Morrow and Company, 1946.
- Byrd, Martha. Chennault, Giving Wings to the Tiger. Tuscaloosa, AL: The University of Alabama Press, 1987.
- Cardwell, Thomas A. III. Air-Land Combat: An Organization for Joint Warfare. Maxwell AFB, AL: Air University Press, 1986.
- Carter, Kit C. and Robert Mueller, compilers. Combat Chronology, 1941-1945, The Army Air Forces in World War II Series. Washington, D.C.: Office of Air Force History, 1973.
- Clausewitz, Carl von. "Principles of War." Roots of Strategy, Book 2. Harrisburg PA: Stackpole Books, 1987.

- _____. On War, Indexed Edition, edited and translated by Michael Howard and Peter Paret. Princeton, NJ: Princeton University Press, 1984.
- Coffey, Thomas M. Hap. New York: Viking Press, 1982.
- Copp, DeWitt S. A Few Great Captains. Garden City, NY: Doubleday and Company, Inc., 1980.
- _____. Forged in Fire. Garden City, NY: Doubleday and Company, Inc., 1982.
- Craven, Wesley F. and James L. Cate, editors. The Army Air Forces in World War II, 7 vols. Chicago: University of Chicago Press, 1948-58.
- Dupuy, R. Ernest and Trevor N. Dupuy. The Encyclopedia of Military History from 3500 B.C. to the Present. Second Revised Edition. New York: Harper and Row, Publishers, 1986.
- Eisenhower, Dwight D. Crusade in Europe. Garden City, NY: Doubleday and Company, Inc., 1948.
- Eric Kson, John. the [sic] Soviet High Command, A Military - Political History 1918 - 1941. Boulder, CO: Westview Press, 1984.
- Falls, Cyril. The Great War. Norwalk, CT: The Easton Press, 1987.
- Frisbee, John L., editor. Makers of the United States Air Force. Washington, D.C.: Office of Air Force History, 1987.
- Fuller, J.F.C. A Military History of the Western World, 3 vols. New York: Da Capo Press, 1954-56.
- Futrell, Robert F. Ideas, Concepts, Doctrine: A History of Basic Thinking in the United States Air Force, 1907-1964. Maxwell AFB, AL: Air University, 1971.
- _____. The Advisory Years to 1965. The United States Air Force in Southeast Asia. Washington, D.C.: Office of Air Force History, 1981.
- _____. The United States Air Force in Korea. Revised Edition. Washington D.C.: Office of Air Force History, 1983.
- Greenfield, Kent R., Robert R. Palmer, and Bell I. Wiley. The Organization of Ground Combat Troops. The US Army in World War II: The Army Ground Forces. Washington, D.C.: Historical Division, Department of the Army, 1947.
- Greenfield, Kent R. American Strategy in World War II: A Reconsideration. Baltimore: The Johns Hopkins University Press, 1963.

- Greer, Thomas H. The Development of Air Doctrine in the Army Air Arm, 1917-1941 US Air Force Historical Study Number 89. Washington, DC: Office of Air Force History, 1985.
- Gurney, Gene. Five Down and Glory. New York: Ballantine Books, 1958.
- Hamilton, Nigel. Master of the Battlefield: Monty's War Years, 1942-1944. New York: McGraw-Hill Book Company, 1983.
- _____. Monty: Final Years of the Field Marshal, 1944-1976. New York: McGraw-Hill Book Company, 1986.
- Hansell, Haywood S. Jr. The Strategic Air War against Germany and Japan. Washington D.C.: Office of Air Force History, 1986.
- Herington, John. Air War Against Germany and Italy 1939-1943. Australia in the War of 1939-45. Series 3, Air: Vol. 3. Sydney: Halstead Press, 1954.
- Howe, George F. Northwest Africa: Seizing the Initiative in the West. The US Army in World War II: Mediterranean Theater of Operations. Washington, D.C.: Center of Military History, US Army, 1957.
- Huston, James A. The Sinews of War: Army Logistics, 1775-1953. Army Historical Series. Washington, D.C.: Office of the Chief of Military History, US Army, 1966.
- Jablonski, Edward. Airwar, 4 vols. Garden City, NY: Doubleday and Company, Inc., 1971.
- _____. America in the Air War. The Epic of Flight. Alexandria, VA: Time-Life Books, 1982.
- Jackson, William G. F. The Battle for North Africa, 1940-1943. New York: Mason/Charter Publishers, Inc., 1975.
- Karnow, Stanley. Vietnam: A History. New York: Viking Press, 1983.
- Knaack, Marcelle S. Post-World War II Fighters, 1945-1973. Washington, D.C.: Office of Air Force History, 1986.
- Kohn, Richard H. and Joseph P. Harahan, editors. Air Interdiction in World War II, Korea, and Vietnam. Washington, D.C.: Office of Air Force History, 1986.
- _____. Air Superiority in World War II and Korea. Washington, D.C.: Office of Air Force History, 1983.
- Liddell Hart, B.H. The Real War, 1914-1918. Boston: Little, Brown and Company, 1930.

- Manchester, William. American Caesar: Douglas MacArthur, 1880-1964. Boston: Little, Brown, and Company, 1978.
- Maurer, Maurer, editor. Air Force Combat Units of World War II. New York: Franklin Watts, Inc., 1959.
- _____. Combat Squadrons of the Air Force, World War II. Washington, D.C.: Office of Air Force History, 1982.
- Merritt, Hardy L. and Luther F. Carter, editors. Mobilization and the National Defense. Washington, D.C.: National Defense University Press, 1985.
- Mets, David R. Master of Air Power. Novato, CA: Presidio Press, 1988.
- Momyer, William W. Air Power in Three Wars. Washington, D.C.: U.S. Government Printing Office, 1978.
- Mortensen, Daniel R. A Pattern for Joint Operations: World War II Close Air Support, North Africa. Washington, DC: Office of Air Force History and US Army Center of Military History, 1987.
- Murray, Williamson. Strategy for Defeat: The Luftwaffe, 1933-1945. Maxwell AFB, AL: Air University Press, 1983.
- Overy, R.J. The Air War 1939-1945. New York: Stein and Day, 1981.
- Patton, George S. Jr. War as I Knew It. Boston: Houghton Mifflin, 1947.
- _____. edited by Martin Blumenson. The Patton Papers, 2 vols. Boston: Houghton Mifflin Company, 1972.
- Pogue, Forrest C. George C. Marshall, 4 vols. New York: The Viking Press, Inc., 1963-87.
- Potter, E.B. and Chester W. Nimitz. Sea Power. Garden City, NY: Prentice Hall, Inc., 1960.
- Puryear, Edgar F. Jr. Stars In Flight: A Study in Air Force Character and Leadership. Novato, CA: Presidio Press, 1981.
- Putney, Diane T., editor. ULTRA and the Army Air Forces in World War II. Washington D.C.: Office of Air Force History, 1987.
- Rader, Steven R. "The Battle of Kasserine Pass: Some Lessons for Today" contained in the Combat Studies Institute's Military History Anthology. Ft Leavenworth, KS: US Army Command and General Staff College, 1984.
- Reynolds, Quentin. The Amazing Mr. Doolittle. New York: Appleton-Century-Crofts, Inc., 1953.

- Richards, Denis and Hillary St. George Saunders. Royal Air Force, 1939-1945. 3 Vols. London: Her Majesty's Stationery Office, 1953-54.
- Robinet, Paul M. Armored Command. Washington, DC: McGregor and Werner, Inc., 1958.
- Rommel, Erwin. edited by B.H. Liddell Hart with Lucie-Maria Rommel, Manfred Rommel, and Fritz Bayerlein. The Rommel Papers. Norwalk, CN: Easton Press, 1988.
- Shores, Christopher, Hans Ring, and William N. Hess, editors. Fighters Over Tunisia. London: Neville Spearman Limited, 1975.
- Speer, Albert. Inside the Third Reich, Memoirs by Albert Speer. New York: Collier Books, 1981.
- Steadman, Kenneth A. A Comparative Look at Air-Ground Support Doctrine and Practice in WW II. CSI Study Number 2. Ft. Leavenworth, KS: Combat Studies Institute, US Army Command and General Staff College, 1982.
- Summers, Harry G. On Strategy. Novato CA: Presidio Press, 1982.
- Tedder, Arthur W. Air Power in War. London: Hodder and Stoughton, 1948.
- _____. With Prejudice. Boston: Little, Brown and Company, 1966.
- Terraine, John. A Time for Courage, The Royal Air Force in the European War, 1939-1945. New York: Macmillan Publishing Company, 1985.
- Thomas, Lowell and Edward Jablonski. Doolittle - A Biography. Garden City, NY: Doubleday, 1976.
- Tuchman, Barbara. The Guns of August. Norwalk, CN: Easton Press, 1987.
- Watson, Mark S. Chief of Staff: Prewar Plans and Preparations. The US Army in World War II: The War Department. Washington, D.C.: Office of the Chief of Military History, Department of the Army, 1950.
- Young, Peter, editor. Illustrated World War II Encyclopedia, 24 vols. Monaco: Jaspard Polus, 1966.

GOVERNMENT DOCUMENTS

- Armed Forces Staff College. AFSC Pub 1, Joint Staff Officer's Guide. Norfolk, VA: National Defense University, Armed Forces Staff College, 1986.

- Arnold, Henry H. Report of the Commanding General of the AAF to the Secretary of War. Washington, DC: Headquarters, US Army Air Forces, 1944. (CARL File # N-68961.)
- Blades, Thomas E. and Ann E. Davis, editors. Descriptive List of Studies of the USAF Historical Division. Washington, DC: US Air Force Historical Division, 1956. (CARL File # N-17529.61.)
- Davis, T.J., compiler. Staff Memorandum No. 7: Lessons of Operation TORCH. APO 512: Allied Force Headquarters, 1943. (CARL File # N-6024.)
- Eisenhower, Dwight D. Report on TORCH and the Tunisian Campaign. Norfolk, VA: Joint Operations Review Board, Army and Navy Staff College, Undated. (CARL File # N-7290B.)
- Finney, Robert T. History of the Air Corps Tactical School 1920-1940. USAF Historical Study Number 100. Maxwell AFB, AL: USAF Historical Division, 1955. (CARL File # N16372.17.)
- Greenfield, Kent R. Army Ground Forces and the Air-Ground Battle Team, Including Organic Light Aviation. Army Ground Forces Historical Study Number 35. Fort Monroe, VA: Historical Section, Army Ground Forces, 1948. (CARL File # N-16170.)
- Hardy, Wilfred H., compiler. Operations in Northwest Africa. (Various unindexed documents from HQ NATAF). Ft. Leavenworth: US Army Command and General Staff College, 1943. (CARL File # N-3497.)
- Joint Chiefs of Staff. JCS Pub 1, Dictionary of Military and Associated Terms. Washington D.C.: Office of the Joint Chiefs of Staff, 1936.
- Kuter, Laurence S. Letter to Commanding General US Army Air Forces, 12 May 1943. Subject: "Organization of American Air Forces." Washington, DC: Headquarters, US Army Air Forces, 1943. (CARL File # N-2704; USAFHRC Ref. # 614.201-1. Some of the documents originally included as appendices to this letter are contained in CARL File # N-3497; see Hardy under Government Documents.)
- Leigh-Mallory, Trafford. Air Lessons Drawn from Operations in North West Africa. London: Headquarters, Royal Air Force, 1943. (CARL File # N-2608.)
- Lynch, George E. Observer's Report, North Africa, 30 Dec 42 - 6 Feb 43. Washington, DC: Headquarters, Army Ground Forces, 1943. (CARL File # N-6207.)
- Melville, Philips, et al. Air Operations in Support of Ground Forces in Northwest Africa (15 March - 5 April 1943). VIII ASC Observer's Report. Washington, DC: Headquarters, US Army Air Forces, 1943. (USAFHRC Ref. # 532.4501.)

- Montgomery, Bernard L. Some Notes on High Command in War. Northern Germany: 21st Army Group Headquarters, 1945. (CARL File # N-15515.)
- Myrick, William S. Jr. Observer's Report, United Kingdom and North Africa, 3 Oct 1942 - 7 Jan 1943. Washington, DC: Headquarters Army Ground Forces, 1943. (CARL File # N-6208.)
- Spaatz, Carl, Letter with inclosures to Commandant, US Army Command and General Staff College. Compiled as part of a file titled: "The Twelfth Air Forces [sic] in North Africa." Ft. Leavenworth, KS: US Army Command and General Staff College, 1943. (CARL File # N-6046.)
- US Air Force. AFM 1-1, Basic Aerospace Doctrine of the United States Air Force. Washington, DC: Department of the Air Force, 1984.
- US Army. First Armored Regiment: North African Campaign, November 8, 1942 to November 30, 1943. Washington, DC: Headquarters, Army Ground Forces, 1943. (CARL File #: MN-1068.32)
- US Army. FM 1-5, Air Corps Field Manual--Employment of Aviation of the Army. Washington, DC: US Government Printing Office, 1940.
- US Army. FM 1-10, Air Corps Field Manual--Tactics and Techniques of Air Attack. Washington, DC: US Government Printing Office, 1940.
- US Army. FM 6-20, Field Artillery Field Manual--Tactics and Technique. Washington, DC: US Government Printing Office, 1940.
- US Army. FM 18-5, Tank Destroyer Field Manual--Organization and Tactics of Tank Destroyer Units. Washington, DC: US Government Printing Office, 1942.
- US Army. FM 31-35, Basic Field Manual -- Aviation in Support of Ground Forces. Washington, DC: US Government Printing Office, 1942.
- US Army. FM 31-35, War Department Field Manual--Air-Ground Operations. Washington DC: War Department, 1946.
- US Army. FM 100-1--The Army. Washington DC: Headquarters, Department of the Army, 1986.
- US Army. FM 100-5, Field Service Regulations--Operations. Washington, DC: US Government Printing Office, 1941.
- US Army. FM 100-5--Operations. Washington, DC; Headquarters, United States Army, 1986.
- US Army. FM 100-15, Field Service Regulations--Larger Units. Washington, DC: US Government Printing Office, 1942.

- US Army. FM 100-20, Field Service Regulations--Command and Employment of Air Power. Washington, DC: US Government Printing Office, 1943.
- US Army. FM 101-5, Staff Officers' Field Manual--The Staff and Combat Orders. Washington, DC: US Government Printing Office, 1940.
- US Army. History of Close Air Support. Annex to CAS Requirements Board (US Army/US Air Force) Final Report. Ft Monroe, VA: HQ US Continental Army Command, 1963. (CARL File # N-17949.31.)
- US Army. Outline History of II Corps. Reports of Operations: 1 January 1943 - 17 August 1943. Washington, DC: Headquarters, Army Ground Forces, 1945. (CARL File # MN-1035.)
- US Army. Thirteenth Armored Regiment: Operations Journal of the Beach Landing at Oran to the Drive to the Sea in Tunisia. After Action Report, 8 May 1943. Washington, DC: Headquarters, Army Ground Forces, 1943. (CARL File # MN-1068.39)
- US Army Air Forces. The AAF in Northwest Africa. Wings at War Series: Number 6. Washington, DC: Headquarters, Army Air Forces, 1945. (CARL File # N-5525.6.)
- US Army Air Forces. Defeat. Washington, DC: Headquarters, Army Air Forces, 1946.
- US Army Air Forces. FM 1-5, Army Air Forces Field Manual--Employment of Aviation of the Army. Washington, DC: US Government Printing Office, 1943.
- US Army Air Forces. FM 1-15, Army Air Force [sic] Field Manual--Tactics and Techniques of Air Fighting. Washington, DC: US Government Printing Office, 1942.
- US Army Air Forces. FM 1-20, Army Air Force [sic] Field Manual--Tactics and Technique of Air Reconnaissance and Observation. Washington DC: US Government Printing Office, 1942.
- US Army Air Forces. FM 1-25, Army Air Forces Field Manual--Air Defense. Washington, DC: US Government Printing Office, 1943.
- US Army Air Forces. FM 1-45, Army Air Forces Field Manual--Signal Communication. Washington, DC: US Government Printing Office, 1942.
- US Army Air Forces. FM 1-46, Army Air Forces Field Manual--Fighter Radiotelephone Procedures and Code. Washington DC: US Government Printing Office, 1943.
- US Army Air Forces. FM 1-75, Army Air Forces Field Manual--Combat Orders. Washington, DC: US Government Printing Office, 1942.

US Army Air Forces. Ninth Air Force in the Western Desert Campaign to 23 Jan 1943. Washington, D.C.: US Army Air Forces Historical Division, 1945. (CARL File # N-1059.)

The United States Strategic Bombing Survey. Over-all Report, (European War). Washington, D.C.: US Government Printing Office, 1945.

PERIODICALS AND ARTICLES

"Air-Ground Cooperation." The Army and Navy Register (29 May 1943): 1-2, 21-22.

Almond, Edward M. "Mistakes in Air-Support Methods in Korea." U.S. News & World Report 34 (March 6, 1953): 58-61.

Anderson, Orvil A. "Close Air Support for Surface Forces." Airpower Historian 11 (January 1964): 32.

Canan, James W. "More Flak in the AirLand Battle." Air Force Magazine 71 (February 1988): 76-81.

_____. "Sorting Out the AirLand Partnership." Air Force Magazine 71 (April 1988): 102-107.

Cate, James L. "Development of Air Doctrine, 1917 - 1941." Air University Quarterly Review 1 (Winter 1947): 11-22.

Clark, Mark W. "What Kind of Air Support Does the Army Want?" Air Force Magazine 33 (December 1950): 24-25, 52.

Cordier, Sherwood S. "Key to Rommel's Victories." Armor 73 (July-August 1964): 48-49.

Correll, John T. "Our Endangered Industrial Base." Air Force Magazine 70 (October 1937): 6.

_____. "The Risks of Austerity." Air Force Magazine 71 (February 1988): 4.

_____. "An Air Force for the Lean Years." Air Force Magazine 71 (June 1988): 56-64.

Dater, Henry M. "Tactical Use of Air Power in World War II: The Navy Experience." Military Affairs 14 (Winter 1950): 192-200.

Davis, Forrest. "How to Conquer the Continent", 2 Parts. Saturday Evening Post 216 (July 24 & July 31, 1943): 20-21, 93-94 both issues.

- Donnelly, Charles L., Jr. "A Theater Level View of Air Power." Air Power Journal AFRP 50-2 (Summer 1987): 3-8.
- Dupuy, Trevor N. "Unity of Command?" Air Force Magazine 38 (November 1955): 46-49.
- Eisenhower, Dwight D. "A Statement on Tactical Air Organization." Air Force Magazine 33 (December 1950): 26.
- Emerson, William. "Doctrine and Dogma." Army Magazine 13 (June 1963): 50-62.
- Ethell, Jeffery L. "Lightning Pilot." American Aviation Historical Society Journal 17 (Spring 1972): 11-17.
- Fitt on, Robert A. "A Perspective on Doctrine: Dispelling the Myth." Military Review 65 (February 1985): 64-74.
- Futrell, Robert F. "Airpower Lessons of World War II." Air Force and Space Digest 48 (September 1965): 42-50, 53.
- Glantz, David M. "The Nature of Soviet Operational Art." Parameters 15 (Spring 1985): 2-12.
- Gorton, William A. "Of Mudfighters and Elephants." Air Force Magazine 71 (October 1988): 102-107.
- Holl oway, Bruce K. "Air Superiority in Tactical Air Warfare." Air University Review 19 (March-April 1968): 2-15.
- Huston, James A. "Tactical Use of Air Power in World War II: The Army Experience." Military Affairs 14 (Winter 1950): 166-185.
- Jenkins, Edward L. "How to Win Wars by Ground-Air Coordination." Military Review 23 (February 1944): 54-56.
- Kuter, Laurence S. "Air-Ground Cooperation in North Africa." Air Force Magazine 26 (July 1943): 4-6, 33.
- _____. "Goddammit, Georgie!" Air Force Magazine 56 (February 1973): 51-56.
- Lind, William S. "Reading, Writing, and Policy Review." Air University Review 36 (November-December 1984): 66-70.
- Lunn-Rockliffe, W. P. "The Tunisian Campaign - Part I." The Army Quarterly and Defence Journal 93 (April 1969): 109-118.
- _____. "The Tunisian Campaign, 1942-43, Part II." The Army Quarterly and Defence Journal 93 (July 1969): 228-235.

- Lynch, E.M. "Close Air Support: Its Failed Form and Its Failing Function." Armed Forces Journal International 124 (August 1986): 72-78.
- Maycock, Thomas J. "Notes on the Development of AAF Tactical Air Doctrine." Military Affairs 14 (Winter 1950): 186-191.
- Megee, Vernon E. "Control of Supporting Aircraft." The Marine Corps Gazette 32 (January 1948): 8-15.
- Myers, C.E. "Air Support for Army Maneuver Forces." Armed Forces Journal International 124 (March 1987): 46-47.
- Oswald, Betty. "History is a Wheel -- with Wings." Western Aerospace 43 (March 1963): 10, 29.
- Parker, Ben L. "Air Power in a Tactical Role." Military Review 26 (August 1946): 49-53.
- Quesada, Elwood R. "Tactical Air Power." Air University Quarterly Review 1 (Spring 1948): 37-45.
- Quinn, William W. "Herman Goering Answers the \$64 Question." Military Review 34 (June 1954): 56-58.
- "Record of Airpower in World War II and Korea." Air Force Information Policy Letter Supplement for Commanders 113 (November 1962): 5-12.
- Robinett, Paul M. "The Axis Offensive in Central Tunisia - February 1943." Armor Magazine 63 (May-June 1954): 7-17.
- Scholin, Allan R. "Momyer and TAC: A Perfect Fit." Air Force and Space Digest 51 (July 1968): 29-33.
- Simpson, Albert F. "Tactical Air Doctrine: Tunisia and Korea." Air University Quarterly Review 4 (Summer 1951): 5-20.
- Smith, Walter A. "You're Covered." Military Review 27 (April 1947): 48-54.
- Spaatz, Carl A. "Evolution of Air Power." Military Review 27 (June 1947): 3-13.
- Sullivan, John J. "The Botched Air Support of Operation Cobra." Parameters 18 (March 1988): 97-110.
- Ulsamer, Edgar. "Winds of Change in Tactical Warfare." Air Force Magazine 71 (April 1988): 45-49.
- Weller, R.C. "Some Truth About Air Support." Air University Quarterly Review 4 (Spring 1951): 2-4.

Wolfenbarger, W. R. "Basic Concepts of Tactical Air Power." Aviation Age 4 (October 1951): 28-29.

UNPUBLISHED MATERIALS

Fabyanic, Thomas A. "A Critique of United States Air War Planning, 1941-1944." St Louis University PhD Dissertation, Ann Arbor, MI: University Microfilms International, 1973.

Gabel, Christopher R. "The US Army GHQ Maneuvers of 1941". Ohio State University PhD Dissertation, Ann Arbor, MI: University Microfilms International, 1983.

Russo, Alan M. "Kasserine, The Myth and Its Warning for Airland Battle Operations," Air War College Research Report #AU-AWC-85-183, Maxwell AFB, AL: Air University, 1985.

Streater, Donald A. "Airpower Theory and Application: An Historical Perspective." MMAS Thesis, US Army Command and General Staff College, 1980.

Hightower, Charles M. "The History of the United States Air Force Airborne Forward Air Controller in World War II, the Korean War, and the Vietnam Conflict." MMAS Thesis, US Army Command and General Staff College, 1984.

OTHER SOURCES

Adair, Alex M. (former member 12th Bm Gp (M), 9th AF). Letter to author, 7 March 1988.

Assistant Chief of Air Staff, Intelligence, Washington, DC.
Air Room Interviews.

Brig. Gen. Elmer Adler (CARL File # N-6219.)

Brig. Gen. Laurence S. Kuter (USAFHRC Ref. # 142.052.)

Beatty, I.M. Jr. (former member 33rd Ftr Gp, 12th AF). Telephone interview with author, 3 March 1988.

Bradley, John L. (former member 33rd Ftr Gp, 12th AF). Telephone interview with author, 27 March 1988.

Coulter, Richard R. (former member 33rd Ftr Gp, 12th AF). Letter to author, 10 March 1988.

Duncan, Berry J. (former member 33rd Ftr Gp, 12th AF). Letter to author, 5 March 1988.

Duncan, Charles H. (former member 33rd Ftr Gp, 12th AF). Letter to author, 14 March 1988.

Gardiner, Henry E. (former commander, 2d Bn, 13th Armd Rgmt, 1st Armd Div). Telephone interview with author, 24 March 1988.

Holcomb, Richard E. (former member 33rd Ftr Gp, 12th AF). Letter to author, 19 March 1988.

Huff, Sherrill D. (former member 14th Ftr Gp, 12th AF). Telephone interview with author, 4 March 1988.

_____. Letters to author, 4 March to 5 April 1988.

Johnsen, Jon F. and John P. Owens. US Air Force Close Air Support. Student presentation, 10 July 1987. Ft. Leavenworth, KS: US Army Command and General Staff College, 1987.

Knapp, Robert A. (former commander 321st Bm Gp [M], 9th AF). A Founder Member's Perspective on Airpower. Speech to Daedalians Flight #20 ("Ben Eielson"), Eielson AFB, AK: 11 December 1986.

_____. Letter to author, 19 August 1988.

Kuter, Laurence S. Statement by Brigadier General Laurence S. Kuter at Press Conference in the Pentagon, May 22, 1943. Maxwell AFB, AL: US Air Force Historical Research Center, 1943. (USAFHRC Ref. # 614.505.)

Low, Curtis R. (former commander 81st Bm Sq and 12th Bm Gp [M]). Letter to author, 14 March 1988 correspondence.

Momyer, William W. (former commander 33rd Ftr Gp, 12th AF). Letter to author, 29 March 1988.

Mueller, Johannes. (former Wehrmacht Corporal Co 6, 69th Rgmt, 10th Panzer Div, Afrika Korps). Interview with author, Ft. Leavenworth, KS: 25 August 1987.

Piper, Robert A. (former member Hq Sq, 12th Bm Gp [M], 9th AF). Telephone interview with author, 22 February 1988.

Terry, R.M. (former member 308th Ftr Sq, 31st Ftr Gp). Letter to author, 11 March 1988.

Thomas, Tom A., Jr. (former member 33rd Ftr Gp, 12th AF). Letter to author, 9 April 1988.

US Air Force. History of the Tactical Air Control System. Commandant's Welcome, 3 January 1989, Joint Firepower Control Course (JFCC). Hurlburt Field, FL: US Air Force Air Ground Operations School (AGOS), 1989.

US Air Force. USAF Basic Doctrine. Lecture, 24 January 1989, Combined Air Warfare Course (CAWC). Maxwell AFB, AL: Center for Aerospace Doctrine, Research, and Education (CADRE), 1989.

US Air Force Historical Research Center, Maxwell AFB, AL
Kuter Papers (USAFHRC Ref. # 168.7012, 34162-34174.)
US Air Force Oral History Interview.
Gen. Laurence S. Kuter. (USAFHRC Ref. # K239.0512-810).

INITIAL DISTRIBUTION LIST

1. Combined Arms Research Library
US Army Command and General Staff College
Ft. Leavenworth, KS 66027
2. Defense Technical Information Center
Cameron Station
Alexandria, VA 22314
3. Air University Library
Maxwell AFB, AL 36112
4. Lt. Col. Robert L. Tipton, USAF .
Air Force Section
US Army Command and General Staff College
Ft. Leavenworth, KS 66027
5. Mr. John A. Reichley, DAC
Directorate of Academic Operations
US Army Command and General Staff College
Ft. Leavenworth, KS 66027
6. Dr. David C. Skaggs, Col., USAR
Department of History
Bowling Green State University
Bowling Green, OH 43403-0220
7. Col. Donald W. Rogers, USAF
Senior Air Force Representative
US Army Command and General Staff College
Ft. Leavenworth, KS 66027
8. Dr. David J. Owens, Lt. Col., USAF, Ret.
7 Hollyhock Lane
Belleville, IL 62221
9. Mr. Charles M. Hawkins, SGM, USA, Ret.
Job Service Center
5000 Capital Boulevard
Tumwater, WA 98504
10. Col. Charles C. Higgins, USAF
9 Oscars Court
Poquoson, VA 23662

11. US Army War College Library
Carlisle Barracks, PA 17013
12. US Air Force Academy Library
USAFA, CO 80840
13. US Military Academy Library
West Point, NY 10996
14. US Naval Academy Library
Annapolis, MD 21402
15. George C. Marshall Library
Virginia Military Institute
Lexington, VA 24450
16. Dr. Richard H. Kohn, Chief
Office of Air Force History
Bolling AFB, DC 20332-5000
17. Brig. Gen. William A. Stofft, USA
Chief of Military History
20 Massachusetts Avenue, NW
Washington, DC 20314-0200
18. Col. Carl W. Reddel, USAF
Chairman, Department of History
HQ USAFA/DFH
US Air Force Academy, CO 80840
19. Col. Robert A. Doughty, USA
Professor and Head of the Department of History
Thayer Hall, US Military Academy
West Point, NY 10996
20. Dr. Craig L. Symonds, Chairman
US Naval Academy
History Department, Sampson Hall
Annapolis, MD 21402
21. Col. George W. Cox, USAF
USAFAGOS/CC
Hurlburt Field, FL 32544-5000
22. Col. William B. Lowe, USAF
ACSC/EDJ, Building 1402
Maxwell AFB, AL 36112-5542

23. Col. Cato L. Reaves, USAF
Director, TAC/TRADOC ALFA
HQ TAC/XP-ALFA
Langley AFB, VA 23665-5557
24. Col. Richard M. Swain, USA
Director, Combat Studies Institute
US Army Command and General Staff College
Ft. Leavenworth, KS 66027
25. Col. Sidney J. Wise, USAF
CADRE/CC, Building 1400
Maxwell AFB, AL 36112-5532
26. Director, Doctrine and Concepts Division
AF/XOXWD
Pentagon, Room 4C1062
Washington, DC 20330-1000
27. Dr. Skip Bradley
HQ TAC/HO
Langley AFB, VA 23665-5001
28. Dr. Christopher R. Gabel
Combat Studies Institute
US Army Command and General Staff College
Ft. Leavenworth, KS 66027
29. Dr. I.B. Holley, Maj. Gen., USAFR, Ret.
Department of History
Duke University
Durham, NC 27706
30. Dr. Roger Launius
HQ MAC/HO
Scott AFB, IL 62225-5001
31. Dr. David R. Mets, Col. USAF, Ret.
Armaments Division/HO
Eglin AFB, FL 32542
32. Dr. Daniel R. Mortensen
Office of Air Force History
Bolling AFB, DC 20332-5000
33. Dr. Williamson Murray, Lt. Col., USAFR
Department of History
Ohio State University
Columbus, OH 43210

- 34. Dr. R.J. Parks
HQ SAC/HO
Offutt AFB, NE 68113-5001
- 35. Dr. Jay H. Smith
HQ PACAF/HO
Hickam AFB, HI 96853-5000
- 36. Dr. Rebecca Hancock Welch
Office of Air Force History
Bolling AFB, DC 20332-5000
- 37. Mr. Robert T. Cossaboom
HQ USAFE/HO
APO NY 09094-5000
- 38. Mr. John H. Cloe
HQ AAC/HO
Elmendorf AFB, AK 99506-5001
- 39. Mr. Tom Manning
HQ ATC/HO
Randolph AFB, TX 78150-5001